



ONEMA Meeting

3rd CIS-SPI event

Water science meets policy: How to streamline knowledge to address WFD challenges?

BRUSSELS, 14 & 15 NOVEMBER 2012



**Frédérique Martini, Kinga Gergely, Christos Fragakis,
Benoît Fribourg-Blanc, Natacha Amorsi, Stephen Midgley**

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The 3rd “Water Science meets Policy” event “How to streamline knowledge to address WFD policy challenges?” organised by the Office National de l’Eau et des Milieux Aquatiques (ONEMA) and the Directorate General of Research and Innovation (DG R&I) of the European Commission (EC) with the support of the Office International de l’Eau (OIEau), took place in November 14-15, 2012.

This publication is available on ONEMA’s web site (<http://www.onema.fr/IMG/EV/cat7a-thematic-issues.html#meetingsrecap>). It has also been referenced in the French national documentation database as part of “les documents techniques sur l’eau” (www.documentation.eaufrance.fr)

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The ad-hoc activity on Water Science-Policy Interface (SPI) of the Common Implementation Strategy (CIS) of the Water Framework Directive (WFD) hereafter referred to as “CIS-SPI ad-hoc activity” was established by the Water Directors in December 2009. It has been set up to ensure a cooperative interface between water research and water policy makers, managers and stakeholders at both EU and national levels. This activity was co-led by the European Commission’s DG Research and Innovation (DG RTD) and France (ONEMA) along its first mandate covering a period of three years (2010-2012). Within this framework, “Water Science Meets Policy” events took place once a year:

- ➡ the first “Water Science Meets Policy” event, held on 30 September 2010, allowed delineating research areas and their associated 180 research issues relevant for WFD implementation;
- ➡ the second “Water Science Meets Policy” event, held on 29-30 September 2011, addressed the role of ecosystem services;
- ➡ the third “Water Science Meets Policy” event of the current mandate, held on 14-15 November 2012, addressed ways of streamlining knowledge to support WFD challenges.

The aims of the 3rd “Water Science Meets Policy” event, subject of the report at hand, had been to demonstrate the added value of SPI at all geographical levels and propose key aspects to implement a

sustainable SPI activity in the CIS structure. The event aimed also to identify possible methods and tools for a successful future knowledge brokering in the CIS context.

To this end, it gathered participants with a wide diversity of profiles, from researchers to policy makers and knowledge brokers, and from local to international origins, to share their expertise and recommendations and build a common view on SPI to support the WFD implementation.

The 3rd “Water Science Meets Policy” event allowed to share and clarify the concept of SPI and concrete successful experiences thanks to a collection of successful examples and intensive discussions with key experts. It helped eventually to identify recommendable structures, tools and mechanisms to be developed and implemented in the future CIS.

To present the findings of this event this report is divided in three main parts:

- ➡ the first one presents the main recommendations as to tools, methods and operational modalities for an efficient implementation and successful SPI in the WFD CIS context;
- ➡ the second one summarises the presentations given during the event; and
- ➡ the third one consists of the Annexes: the event's programme, the list of participants, the list of facilitators and rapporteurs, the members of the organising committee and the list of acronyms. ■

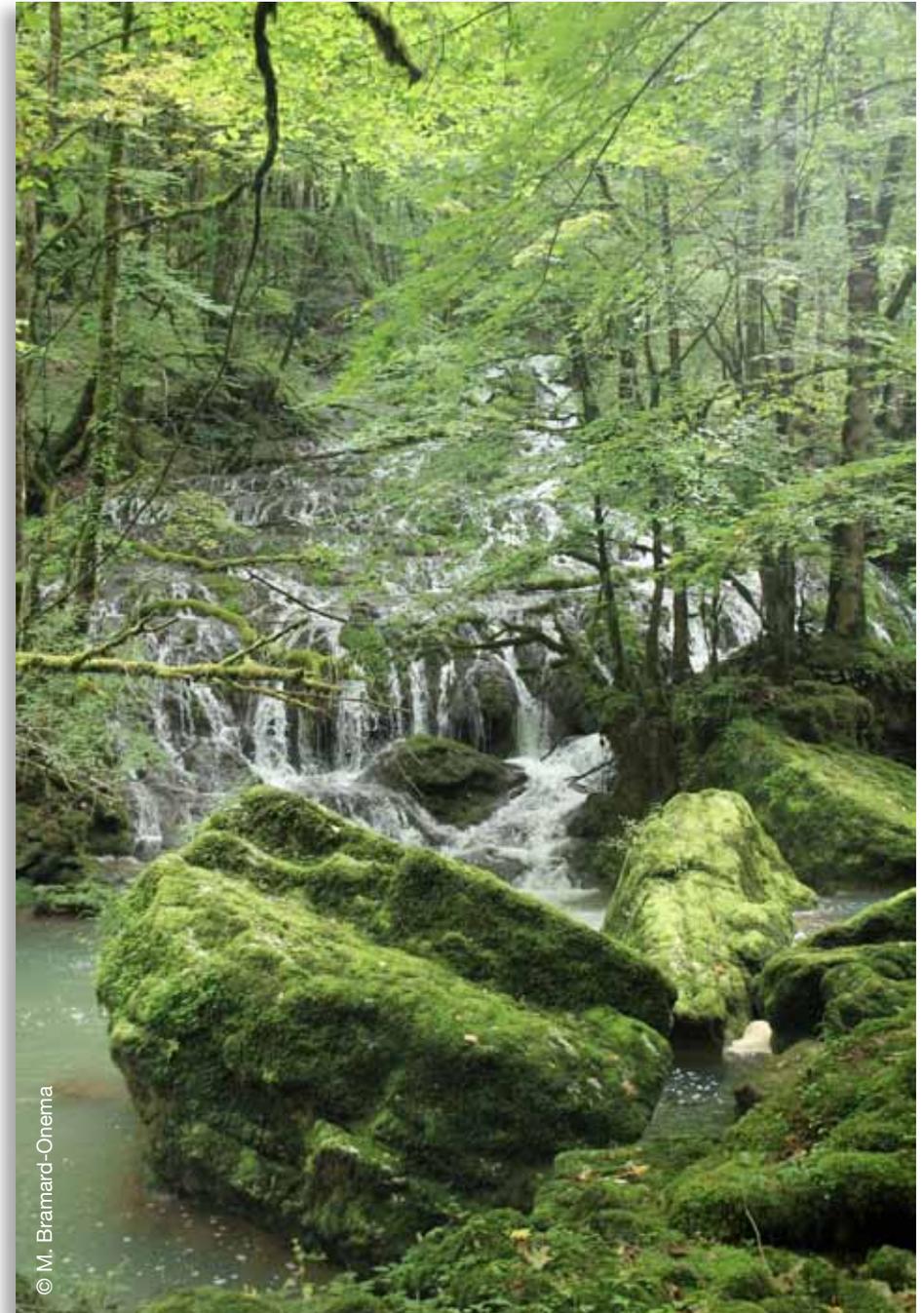


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Executive summary

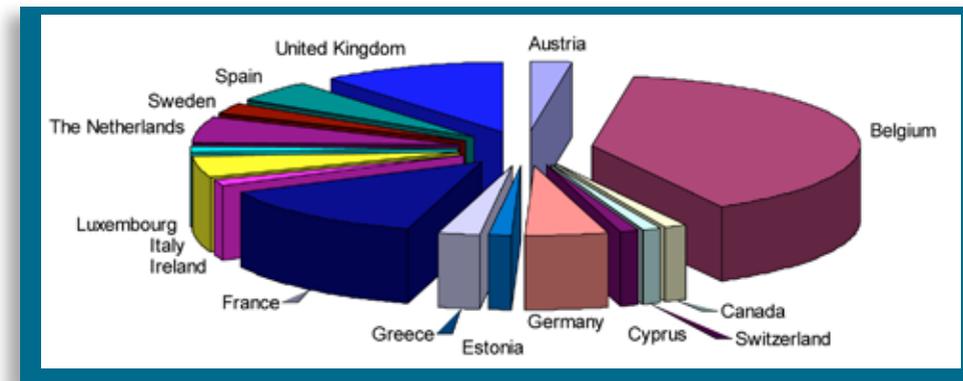
1. About the workshop

The 3rd CIS-SPI event co-organised by ONEMA and DG RTD in Brussels on 14-15 November 2012 attracted 78 participants with 16 countries represented including Belgium (17), France (11), the United Kingdom (9) and the European Commission (15), as illustrated by the Figure 1. This event was the last under the CIS-SPI ad-hoc activity's 2010-2012 mandate. It was a unique opportunity for sharing experiences and good practices in interfacing science with policy among the participants from various backgrounds including policy

makers (35%), scientists (32%), water managers (6%) and representatives of the private sector (27%).

The event was organised in two main sessions: one aiming to discuss the past and recent experiences in Science-policy interface (SPI) implementation, the associated tools and methods and the operational modalities to ensure its success, and the second consisting of a series of panel discussions with supporting keynote speeches on examples of how some EU funded projects interacted

Figure 1. Countries represented at the 3rd CIS-SPI event (Belgium includes EC officials)



with the respective WFD CIS groups. Moreover two sets of roundtables took place to allow for fruitful and constructive exchanges between the event participants from which emerged the recommendations summarised below.

2. How to make SPI beneficial: main recommendations from the workshop

SPI activity can bring clear added-value. This can be achieved by following the recommendations that emerged from this 3rd CIS-SPI event presented below.

Improve transfer and customisation of research outputs to make them easier to access and understand by the policy makers and water managers

Customised documents such as “benefits fact sheets” are a means to improve the take-up of knowledge by policy makers by clearly stating the added value of the projects. Summarising the research information generated by the projects and making them easily accessible through a more central repository would be instrumental in ensuring transfer of knowledge. This should be in addition to the project websites and should be seen as a more sustainable store of information.

The research outputs (expected and final) of a project and the cost of no action should be better identified. An evaluation system of the project impacts and a better identification of policy question(s) the projects are targeting should be included in the research assessment.

Create a community of practices and improve standardisation to bridge the gap between science and policy

In order to avoid the language barrier between regulators and researchers, there is a need to find a common language between these communities. Moreover, to facilitate understanding and communication, trained-people (such as skilled knowledge -brokers) who understand science and can communicate it accordingly to the audience are key actors at each stage, as well as training and education of future researchers on SPI.

Adapt and adjust research topics to the policy needs

The research agenda should be adjusted to the users’ needs to give priority to demand driven research (while basic research should not be excluded), keeping in mind the added value of co-creation of research agendas by both the research and policy sides. Research funding

organisations need to pinpoint to related policies, to use societal impact evaluation criteria and support knowledge brokerage even after the projects ends.

Finally, not only brokerage from science to policy is needed, but also the real background of the policies need to be rephrased to make researchers and public equally aware of what the policies are meant for.

3. Factors for success of SPI in the CIS: structure and operational modalities

Operational modalities

The following recommendations can be drawn from the workshop about what should be done to improve the SPI in the CIS framework in terms of operational modalities.

Enhance involvement of stakeholders at different levels

National and river basin levels should be involved at different steps in the project.

The association of decision makers and policy makers from the beginning of the projects targets the identification of knowledge gaps.

The involvement of stakeholders allows running collaborative research actions with clearly defined priorities.

Knowledge brokers and associated tools may help improve dialogue and communication between all the communities in a multi-disciplinary perspective.

Three main actors are relevant for the SPI in the EU context

These are the River Basin District authorities, the national /Member State level together with the CIS groups, and the European Commission (DG ENV and DG RTD in this context). The River Basin District authorities

provide a good framework to keep the windows of opportunities open and allow for continuity in the process and long term planning.

Ensure close connection between European projects and the CIS groups

A close connection between projects and policy makers can be supported by dedicated tools and mechanisms in order to provide scientific information to policy makers and also get feedback from them. The development of demonstration sites would also help convince end users and policy makers of the added value of research results produced by projects, providing the evidence base to convince policy makers.

Working principles and actors

As for the structure or working principles and actors, the

workshop highlighted the following points.

A sustainable activity involving knowledge brokers

The most important factor to enhance the SPI in the CIS context is to make it a permanent activity based on committed people instead of an ad-hoc activity. Such a move towards a more systematic activity to be successful needs to rely on sustained, dedicated, appropriately resourced and trained people acting as knowledge brokers (such as SPI correspondents) and having this activity in their roadmaps. Knowledge brokering has to be recognised and rewarded to promote the emergence of skilled experts.

SPI as a working principle

SPI should be a CIS working principle spread across all

levels of the CIS supported by a SPI-network involving SPI correspondents closely connected to the works of the CIS groups and the overall CIS structure. It would be useful to give a clear mandate to CIS groups and their SPI correspondents to engage in a continuous and systematic appropriation of SPI-related activities and have SPI as a regular point in their meetings agendas as well as cross-CIS groups meetings to share SPI practices.

Mechanisms and tools

Useful mechanisms and tools were also identified.

Knowledge brokering

Knowledge exchange has to be a continuous process and its usefulness shared by all involved actors, including closer contact between CIS groups and research projects.

A set of tools to access research, policy needs, and accessible abstracts would greatly facilitate this process.

Transfer and sharing of knowledge should be enhanced through

tools, methods and guidance.

All information must be easily accessible including tools to deliver information that should be defined jointly by the research community and the end users.

A central repository could elaborate on the most promising ways to disseminate scientific information such as thematic syntheses, policy briefs and “benefits briefs” for the implementers.

Better integration of the scales of relevance to the policy and management within the SPI process will allow to increase the impacts of the SPI on them and better account for the interactions between them. It can be enhanced by implementing a knowledge brokering process at all levels.

To support the SPI process the organisation of thematic workshops focused on specific scientific questions should be organised on a regular basis. This will also ensure the maintenance of contacts between policy and science.



© Teamwork

To assess existing research and research gaps

Effort in terms of time and funding to assess existing research, raise awareness on existing tools and research outputs should be continuous as they are all key activities with a

clear added value for both the research and the policy communities.

A methodology for regular mapping of research and prioritisation of gaps should be developed to regularly feed research call programming at EU and national/regional levels.

4. The possible way forward for CIS-SPI

Based on these discussions and recommendations, a structured SPI mandate as well as a work programme with some key activities can be established.

To start with: some basic principles

This future activity in the CIS may be based on the following basic principles:

- ➔ establish a better acknowledgement of sustainable science-policy interfacing within the CIS framework;
- ➔ base the SPI on a network consisting of committed people being able to dedicate the necessary time and resources on the SPI-relevant tasks and facilitated by identified SPI-leaders;
- ➔ ensure a continuous update of the needs is undertaken with some tasks (e.g. knowledge transfer and expression of needs) regularly carried out;
- ➔ support a continuous communication between policy

makers, WFD end-users in particular at the river basin level, and the scientific community.

Tasks to be implemented on a regular basis

Transfer of existing knowledge and communication of research outputs to the CIS groups and the river basin level

The first task here is to enhance the assessment, transfer and sharing of knowledge and experience relevant to the CIS themes. This should include the development and testing of various tools and methods to facilitate and enhance this transfer of knowledge.

Secondly this process needs to be repeated at the national and river basin levels. It is felt that involvement of and connection with the river basin level should be set as a priority. To support this, easy access

to information should be provided through the support of a permanent website and/or social network tool (e.g. European Water Community, WISE-RTD)

Identification of needs for information, matching against existing knowledge, identification of research gaps and communication

The formulation of the policy relevant challenges/questions to be addressed should be done in such a way that they may be easily understood and taken on board by the researchers. Thus, there's still work to be done on:

- ➔ assisting policy makers in formulating the right scientific and technical questions;
- ➔ keeping policy makers committed and interested in the research projects throughout their implementation;
- ➔ keeping the on-going research aligned to the policy needs and if needed adjusting the research direction accordingly¹.

¹ Such prioritization would feed continuously into the implementation of the Horizon 2020 - the next EU Framework Programme for Research and Technological Development for the period 2014-2020 and the Joint Programming Initiative on water which is currently being elaborated and will be implemented by the owners and managers of the water-related national research programme from 19 partner countries (www.waterjpi.eu).



A SPI activity should ensure a regular and systematic mapping of existing research activities and an assessment of priority research needs expressed by the CIS: the remaining research gaps should then be passed on to research funding organisations for follow-up.

The activity must contribute to improving the research outputs dissemination and up taking within and among the CIS groups and river basin levels.

What is still fundamentally needed is a continuous process to:

- ➡ summarize the outcomes of the research;
- ➡ translate these outcomes in a language easily understood by the policy-makers and;
- ➡ transfer these outcomes to the policy makers and the implementers at the river basin level.

Working principles for SPI in the CIS

SPI should be recognised as a working principle and one operational objective of the CIS in general and the CIS groups in particular

A decentralised SPI activity

The SPI activity should be decentralised within each CIS group. It should rely on identified and committed people constituting a SPI-network and based on roadmaps clearly indicating their responsibility as a SPI correspondent/actor or knowledge broker acting on the behalf of the CIS groups, at the SCG level or as national SPI focal points ; these people should be assigned to contribute in and facilitate the implementation of the SPI activity (needs assessment, existing knowledge assessment, and transfer of knowledge) on a regular basis.

SPI as a regular agenda item

SPI should become a regular point in CIS groups' meetings agendas: each CIS group should

dedicate a point on research and development if possible at each CIS group meeting to promote knowledge transfer (so that projects may be presented to the group; see also below “working principles for the research community”); this task should be overseen by the CIS group leaders and SPI correspondents with the assistance CIS-SPI activity co-leaders if needed.

Cooperation and exchange

A stronger cooperation/exchange between and within the CIS groups should be encouraged to share existing knowledge practices and experiences and also to establish stronger links with the SCG. Also, stronger relationship and interactions with the national SPI correspondents/focal points are to be sought.

Workshops

Dedicated workshops to make projects and policy makers meet on a specific scientific topic or CIS thematic should be organised. Yearly CIS-SPI “science meets policy” events may also contribute to bridging the gap between science and policy within the CIS framework.

The CIS groups' work should be supported by an overarching CIS-SPI

An overarching CIS-SPI activity may be in charge of:

- ➡ animating the SPI-network and ensuring the production of state-of-progress of the activity for the SCG and the Water Directors;
- ➡ gathering the research gaps identified by the various CIS groups and streamlining them to DG Research and Innovation and water EIP and JPI;
- ➡ informing CIS groups about relevant RTD projects and oversee that close links are being maintained between them and facilitating the transfer of this existing knowledge;
- ➡ in close connection with the CIS groups, regularly organising “water science meets policy” events focusing on the CIS group's topics such as forum where expression of needs and sharing and transfer of knowledge may be facilitated;
- ➡ ensuring that research projects produce regular policy briefs; transferring them to the corresponding CIS groups themes, and encouraging their

stocking in one unique electronic location easily accessible by policy-makers and implementers at the national and the river basin levels;

➔ regularly organising state-of-the-art knowledge dissemination meetings back-to-back to the SCG meetings;

➔ elaborating communication tools for communication on CIS-SPI activity and maintaining a virtual network;

➔ establishing and disseminating regular information on CIS-SPI activity (e.g. newsletter).

Working principles for the research community

The research projects (in particular those funded by the EC) should be encouraged to follow some working principles.

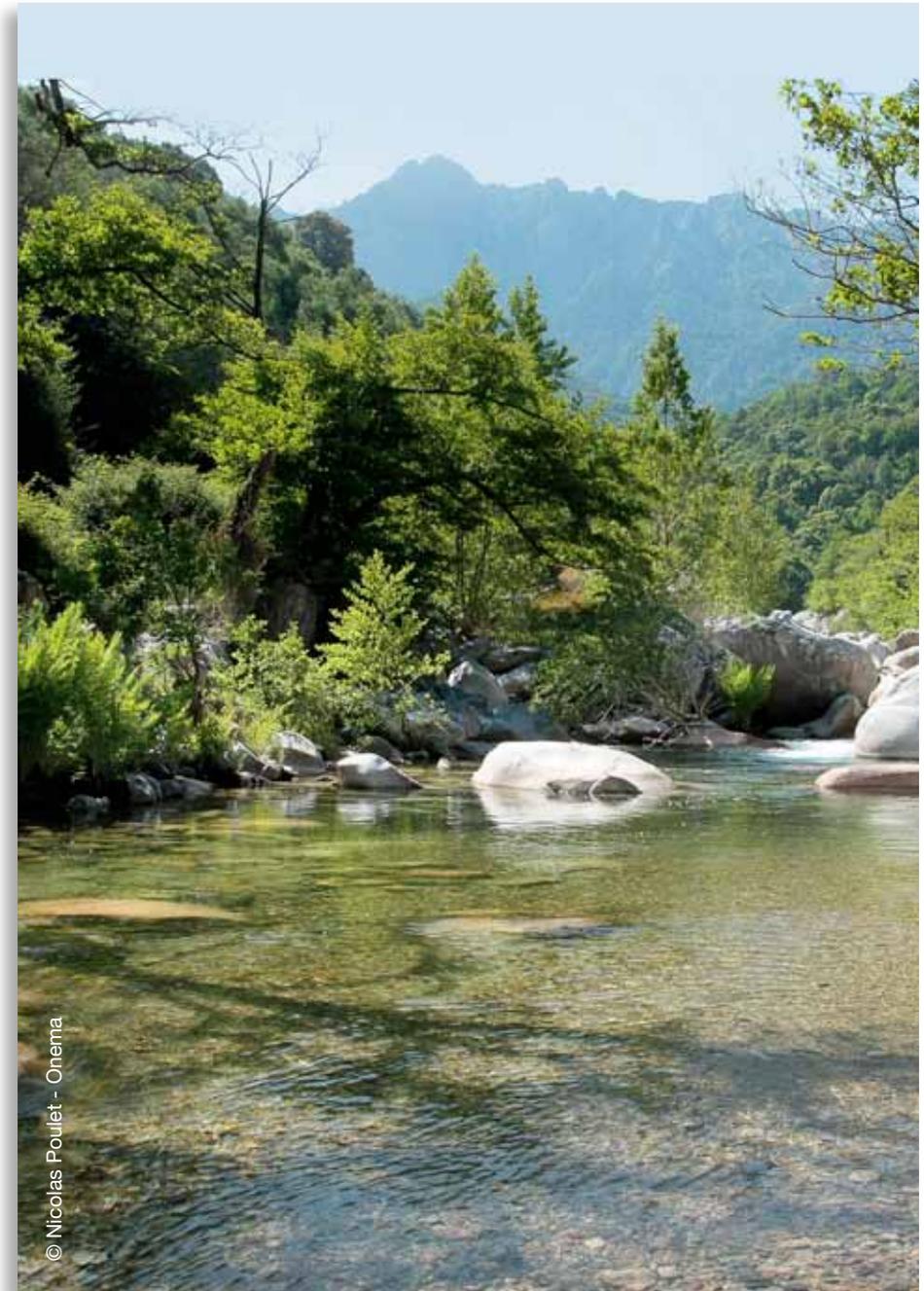
They should provide at the very beginning of their implementation to the policy makers (in particular CIS groups) a one-page e-mail or document consisting of a concise project summary, contact details and expected outcomes and benefits to the policy makers.

During their life, projects should maintain continuous interaction

with the CIS groups and other end-users and produce regularly updated policy briefs (in English and the different languages of the project). All those policy briefs should be uploaded at a repository easily accessible (electronically).

A recommended template for such a policy brief has been established by CIS-SPI activity (see template proposal in the CIS-SPI full report). It should be made mandatory for the EU-funded projects.

Enhancement of research outcomes up taking by users at the river basin level should be sought. To this end, presentation of projects' outputs addressing policy makers and WFD implementers should be regularly organised (may be in the frame of CIS groups regular meetings).



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Presentation of the workshop

1. Context

In the context of the Water Framework Directive (WFD), its daughter Directives and the Floods Directive (FD) implementation, the ad-hoc CIS activity (2010-2012) dedicated to science-policy interface, co-led by DG RTD of the EC and ONEMA, France, hereafter designated by “CIS-SPI ad-hoc activity”, aims to ensure a seamless and dynamic interface between science and policy and thus provide science and evidence-based support for the implementation of the WFD and other water related directives.

To this end, this CIS-SPI ad-hoc activity has to assess the needs for knowledge from the CIS working groups and experts groups, cross-check them against available knowledge and pass on identified gaps to the research organisations and funders.

It should also come up with recommendations to improve the knowledge brokering between the two communities in play.

To achieve these tasks, three yearly “Water Science Meets Policy” events had been organised by the CIS-SPI ad-hoc activity. The first one in 2010 focused on the identification of research needs associated with the implementation of the WFD, its daughter Directives and the Floods Directive. The second one, held in 2011, focused on knowledge transfer related to the use of the ecosystem services approach in the context of the implementation of the WFD, its daughter Directives and the Floods Directive.

The third event held on 14-15 November 2012 focused on how to improve the transfer

and usability of the research outputs and promote knowledge brokering practices and operational structure to streamline their implementation.

By taking stock of some successful SPI activities and CIS groups' experiences and some others, this event aimed at better outlining how a more efficient SPI activity could effectively be implemented within the CIS framework with the main purposes of:

➔ fostering an effective knowledge sharing and transfer, hence enabling optimal use of knowledge in the implementation of the WFD, its daughter Directives and the Floods Directive. This requires investigating operational ways of improving knowledge transfer and usability, and proposing recommendations accordingly;

➔ ensuring the better alignment of policy needs with research planning, implementation and effective outputs dissemination.

2. Objectives and working principles of the 3rd SPI event

The main objective of the third CIS-SPI event was to identify best structures, practices and tools to consolidate the science-policy interface in the WFD implementation process and adapt it to actors (at EU, national and river basin levels) having the responsibility to effectively implement the WFD, its daughter Directives and the Floods Directive.

Three key objectives were identified.

Demonstration of the added value of science-policy interface

This was done through a selection of success stories in the water sector regarding SPI activities worldwide, and at European, national and river basin levels. These examples provided evidence of added-value in developing and implementing wider SPI activity within the CIS framework for the implementation of the WFD, its daughter Directives and the Floods directive.

Elaboration on structures and mechanisms

The aim was to provide a frame for operational modalities of SPI in the CIS and elaborate upon recommendations regarding schemes, structures, networking arrangements, processes and practical methods to ensure an active, continuous, dynamic and sustainable science-policy interface in the CIS context.

Investigation on methods and tools for knowledge brokering

The aim was to elaborate on tools, potential actors and special skills to communicate and disseminate information according to the water policy implementation at EU, national, regional and local levels in order to run knowledge brokering through the SPI activity. Customisation of the information to address the users' needs at the various levels (EU, national, river basin), including cross-scaling issues was to be investigated, with realistic ways of addressing them within the current CIS structure.

Furthermore, the event aspired to reach an agreement on the format, the nature of information and the level of details for effectively communicating knowledge within the CIS to match the needs of various users' groups and levels involved.

This event began with a presentation of the state of progress and outcomes of CIS-SPI (achievements, results, strengths and weaknesses, lessons learnt). It continued with keynote speeches on examples of SPI implemented at different geographical levels and involving different actors. A set of roundtables/break-out sessions allowed collecting the views of the participants on the above key objectives afterward reported to the entire audience. Moreover, two panel sessions were made up of keynote speeches on key aspects and discussion with the audience on the main aspects raised.

3. Participation

With 81 participants, the 3rd SPI event gathered a wide set of experts, of which:

- ➔ 64 from Member States;
- ➔ and 2 from non Member States.
- ➔ 15 from the European institutions;

(Figure 2)

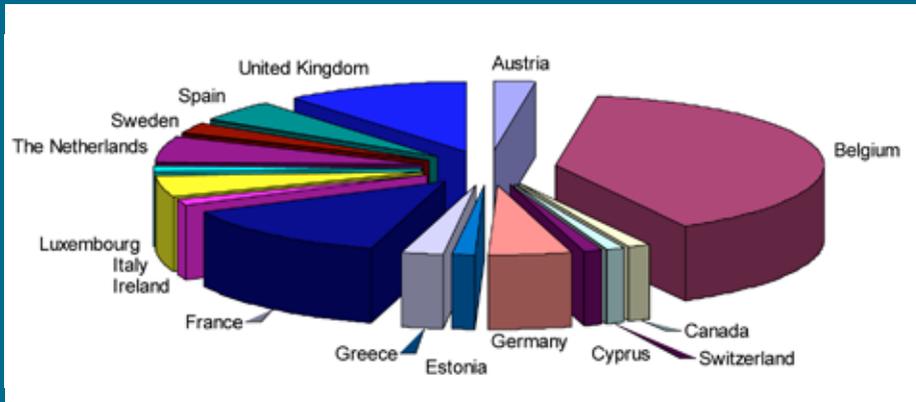


Figure 2. Countries represented at the 3rd CIS-SPI event (Belgium includes EC officials)

The participants were involved in different water policy levels going from regional to international as illustrated in the following. (Figure 3)

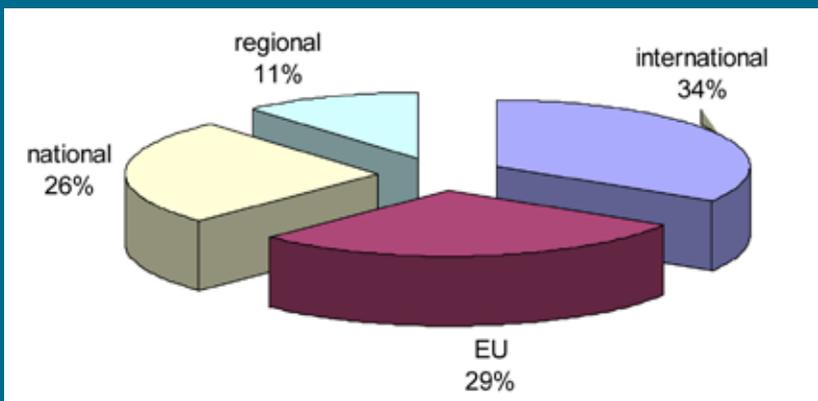


Figure 3. Water policy level of participants



Science policy interface, a recognised need

This part of the report gathers the main findings from the workshop. It makes use of all the fruitful discussions and contributions from speakers and participants to propose a vision and some recommendations to move forward from a CIS-SPI ad-hoc and experimental activity to a sustainable and continuous SPI in the framework of the WFD CIS for the benefit of WFD implementation.

SPI needs at different implementation levels



1.1. SPI experiences at all geographical levels

Compilation of and lessons learnt from SPI activities around the world

K (KStar) & the Water Science-Policy Interface: an international perspective*

Alex BIELAK (Knowledge broker, Environment Canada and chair of K* initiative, UNU-INWEH) presented the K* (KStar) initiative he was leading regarding issues such as knowledge transfer, mobilization, brokering.

The K* initiative consists of a compilation of lessons learned from SPI activities around the world, presenting key messages and SPI success factors. The K* initiative embeds functions and processes at various interfaces between knowledge, practice and policy, and aims at improving ways in which knowledge is shared and applied.

Within this initiative a full conceptualisation called K* spectrum was developed that distinguishes different functions and important concepts with special importance for “knowledge brokers”. These are illustrated with different case studies that can be mapped on this K* spectrum. The K* initiative has analysed the structural, individual, organisational and systemic obstacles. It provided toolkits available on a dedicated website (<http://inweh.unu.edu/kstar/>), and also concluded on specific skills knowledge brokering requires.

As a conclusion, Mr. BIELAK highlighted the 4 key factors that make SPI a success:

- ➡ stop re-inventing the wheel: recognise existing barriers and required skills and use existing tools;
- ➡ think about and invest in knowledge functions up-front: identify those needed, have in-house intermediaries, define audience targeted dissemination, assess success;
- ➡ involve all players from the beginning and keep them informed/involved;
- ➡ start effectively the work: no restrictions on who can be knowledge broker, no need to invest high costs.



Example of SPI activity at the international river basin level

Streamlining Knowledge to Address WFD Challenges: The Danube Case

Philip WELLER (Executive Secretary of the International Commission for the Protection of the Danube River (ICPDR)).

The River Danube is the most international river in the world involving both EU and non-EU countries covering a wide range of economic developments, as well as local contexts or situations. A Convention was signed in 1994 to deal with the protection of water and ecological resources, sustainable use of water, pollution reduction (nutrients and hazardous substances) and to manage floods and ice hazard. The Convention is supported by a small secretariat (located in Vienna) and comprises different working groups involving countries and other participating organisations.

The ecological and chemical status do not belong to WFD

categories “high” or “good” for a large part of the river with significant water management issues on organic pollution, nutrients, hazardous substances and hydromorphological alterations.

To tackle these, the River Basin Management Plan reflects and identifies the main aspects and the necessary programme of measures, and draws conclusions on the necessary funding and evaluation of the implementation of measures already in place.

Science basis is fundamental for the management of the Danube, especially in relation to the impact of climate change. Furthermore, science needs have been reshaped by the WFD and Flood directive requirements. ICPDR has organised or has been part of research actions targeted at key policy issues.

Recently, a monitoring programme has been developed and a joint Danube Survey is conducted every 6 years by a team of scientists. A model of pollutant flows was implemented with the help of the MONERIS model, developed through a European Framework Programme (FP) funded project on nutrient emission and further

funded to be applied on the Danube. Longitudinal connectivity and Fish Migration is addressed, as well as showcase examples on some key aspects like river bank restoration or connectivity with side arms... In order to better envisage the future situation climate adaptation and land use had also been studied.

As a conclusion, Mr. WELLER put emphasis on the following points:

- ➡ application of the above described models and research demonstrates that sound information together with science are the foundation of the ICPDR's work;
- ➡ however, there is still room to improve the connection between projects, research work, policy and decision makers.

Examples of SPI activity at the European level

The WFD CIS-SPI ad-hoc activity: State of progress and lessons learnt during the period 2010-2012

CIS-SPI 2010-2012 report²

Frédérique MARTINI (ONEMA) presented the overall CIS structure and how the CIS-SPI ad-hoc activity is embedded in the process. The three tasks of the CIS-SPI ad-hoc activity were detailed as:

- ➡ identification of research needs;
- ➡ assessment of existing research and remaining research gaps;
- ➡ improving transfer and usability of knowledge.

The CIS-SPI ad-hoc activity had worked closely with all CIS groups thanks to a SPI correspondent in each of these groups insuring effective collaboration. The work was done on best effort and voluntary basis during 2010-2012 period. Yearly "Water Science Meets Policy" events were organised to facilitate communication

² Available on EU Bookshop <https://bookshop.europa.eu/en/home/> and from ONEMA's web site <http://www.onema.fr/IMG/EV/cat7a.html>

between the two communities i.e. the policy makers and research community. Regular reports were provided to the Strategic Coordination Group (SCG) and the European Water Directors group (WD). The activity and its methodology aimed at establishing a link between the two communities. Furthermore, CIS-SPI ad-hoc activity had focused on creating a SPI community of practice.

The results of the yearly "Water Science Meets Policy" events were as follows:

- ➡ 180 research needs were identified on the occasion of the first event in 2010;
- ➡ the second event, held in 2011, contributed to clarify the ecosystem services concepts, together with an evaluation of their usage and valuation with tangible examples. It had also allowed identification of the research needs associated with the ecosystem services approach. This was a concrete exercise of knowledge brokering;
- ➡ the third event focused on the key aspects of SPI: structures, mechanisms and actors for the continuation of the SPI in the CIS, as well as on methods and tools for knowledge brokering.

Michel SCHOUPPE (European Commission - DG RTD) then continued with additional results achieved through the three main tasks of CIS-SPI ad-hoc activity.

Along the 3 years of its activity CIS-SPI ad-hoc activity has gathered a collection of 34 policy briefs from 23 EU-funded research projects of direct relevance to the WFD and made them available for professionals. With a view to homogenising the way policy briefs are presented, CIS-SPI ad-hoc activity has proposed a policy brief template (refer to CIS-SPI 2010-2012 report).

An innovative CIS-SPI workshop was organised in 2011 back-to-back with an SCG meeting where key EU financed FP7 water projects and scientists were invited to meet SCG members and provide them with policy relevant information.

In the field of knowledge dissemination the Water Information System for Europe - Research and Technology Development (WISE-RTD, FP project) system delivers information on water technology projects (FP3-FP7), LIFE projects, as well as INTERREG projects. It includes



now about 1000 projects and had also been complemented with a guided search tool and e-learning on how to use the system. All projects had been invited to provide information on their findings to be delivered by the system.

CIS-SPI ad-hoc activity achieved an assessment of research needs based on inputs from the CIS groups, step-by-step organised, enriched and prioritised along the years, and a mapping of existing knowledge produced by EU research projects which could match these needs and cover them at least partly. The assessment showed that remaining gaps between needs and offers are very rare.

According to Mr. SCHOUPE the main lessons learnt from this 3-year activity may be summarised as follows:

- ➔ time resource is amongst the main constraints in a voluntary best effort approach;
- ➔ knowledge exchange has to be seen as a continuum, leading to identify core success factors;
- ➔ research questions and policy questions have to be developed together;

- ➔ templates are not enough, promotion of use and systematic delivery and feedback from policy makers are also necessary;
- ➔ expected results from projects should be highlighted from the beginning and regularly revised, and ultimately stored in permanent locations.

The above lessons lead to some recommendations for an efficient and sustainable SPI activity in the CIS context:

- ➔ moving the SPI activity from an ad-hoc experience towards a more systematic activity relying on a sustained and appropriately resourced SPI-network closely connected with the CIS structure involving SPI correspondents;
- ➔ SPI should be a CIS working principle spread across all levels of the CIS;
- ➔ transfer and sharing of knowledge should be enhanced through tools, methods, guidance and repository associated with alert systems;
- ➔ a methodology for regular mapping of research and prioritisation of gaps should be developed to regularly feed research call programming at EU and national/regional levels.

Finally, Mr. SCHOUPE reminded that the next steps following this



event are the finalisation of the CIS-SPI ad-hoc activity report for the 2010-2012 period and its presentation to the Water Directors. The outcomes of the 3rd event and the feedback from the Water Directors on the 1st period of the CIS-SPI ad-hoc activity will be used to prepare the follow-up activities.

Following this general presentation of CIS-SPI ad-hoc activity and its main results, focus had been set on answers, experiences and impacts of SPI activity in two CIS working groups as examples.

WG-E on chemical aspects

Robert KASE (Swiss Centre for Applied Ecotoxicology, CH) introduced the WG-E and its 3 sub-groups whose activities generate need-oriented knowledge for the WG-E.

The main steps of the SPI activity in this group were the identification of 23 research topics following the CIS-SPI 2010 workshop and 16 additional new topics after distribution of the questionnaire, a prioritisation exercise leading to prioritise the 39 topics, and a final report embedding all the SPI activities of WG-E. The collected information allowed a clear prioritisation of the topics, with some new topics that influenced the results.

This work highlighted that the top priority topics also had the highest knowledge availability. Knowledge availability was greatest where urgent need had been recognised. It is however not sufficiently considered within the policy planning procedure, which shows that policy makers still have to analyse the information they need, and be able to identify and access it. The questionnaire elaborated by CIS-SPI and circulated in the WG-E helped

define what was needed, where to look for this information, and finally gather existing knowledge.

WG-E organised participation of external speakers for knowledge exchange on a need-oriented basis. As Mr. Kase pointed it out, these actions allowed less redundancy in research, a better focus on unsolved issues and real needs, and finally influencing research programmes by policy needs expression.

To conclude, Mr. KASE highlighted the following points to be considered:

- ➔ the gap between science and policy has to be reduced with the help of the two communities: scientists need to address their knowledge to regulatory authorities in a regulatory compatible form; regulators need to refer to applicable science and scientific evidences for regulation and political decisions;
- ➔ the role of SPI is to organise structures for an efficient knowledge exchange and generate a need-oriented win-win situation for the majority of stakeholders and CIS groups;
- ➔ SPI could ensure higher efficiency in the WFD implementation through knowledge transfer supported by a continuous and

accepted process useful for all involved actors and influencing further research.

Working Group on groundwater (WG-C)

Rob WARD (British Geological Survey, UK) emphasised the group's production of several CIS guidance documents and reports, as well as recommendations on revision of the GWD and the influence of climate change on groundwater.

SPI activities have been included as a standing item on WG's agenda. These activities including relevant research presentation and needs identification supported the WG-C work. The 2010 CIS-SPI workshop identified 5 research areas and their associated research topics as relevant for WG-C: climate change, groundwater dependent ecosystems, groundwater ecosystems, urban areas and pollutants. Another one (programmes of measures) had been added after the workshop.

After circulation of a questionnaire based on the 1st CIS-SPI event findings, the WG-C came to 10 priority research topics and 12 additional items.

The SPI activity has also shown that many examples of science uptake exist, such as the CIS guidance based on a concept developed by research projects, case studies on research projects, or research results used for revision of the GWD.

Mr. WARD emphasised the following results derived from the work of WG-C:

- ➔ the presence in the WG of researchers involved in projects covering the same topics than WG-C and the presentation by some other projects of their results to the WG have obviously not been enough but allowed to identify many projects;
- ➔ in terms of gap analysis, finding relation between research projects (content and outputs) and the research topics (identified during

the early stage of the CIS-SPI ad-hoc activity) is always a big problem;

- ➔ the SPI activity demonstrated that although networks/lobby organisations (IAH, EGS, IGRAC, EUREAU, Eurometaux, EEB, etc.) already exist, they need stronger involvement (permanent from the side of the science community);
- ➔ the communication on needs for knowledge requires further improvement;
- ➔ a better link is needed with research carried out by Member States and stakeholders;
- ➔ the situation might be significantly improved by the support of existing tools such as WISE-RTD, and also by national focal points or research programmers with the help of people involved in SPI.



Example of SPI activity at the National level: an English case study

Bob HARRIS (Department for Environment, Food and Rural Affairs (Defra), Secretariat of the Demonstration Test Catchments Project, UK) reminded the delegates of the need for the right type of communication, with the language, context and conceptual understanding as core aspects.

Emphasis should also be put on the necessity to understand the geographical scales involved, to be able to communicate between top and bottom, policy being often formulated at national level and delivered/applied at a lower level whereas science and knowledge inform all levels. The need to involve local level implementation is of particular importance as here, they really apply and report what is working or not.

Mr. HARRIS pointed out that timescales often don't match: policy wants short-term deliverables with no uncertainty, while academics are driven by their ambition to succeed in the research field. Policy cycle and evidence cycle have not the same steps, nor the same timing, and there are only certain

times when science can influence the policy agenda, a fact that has to be acknowledged.

In the UK, the Rural Economy and Land Use Programme (RELU) lasted 8 years and involved 26 million pounds. It was managed as a programme involving targeted publications for policy makers: outcome synthesis, knowledge transfer. Combined with investment in the management of the whole programme to make a difference, the project was successful in terms of SPI. The National Groundwater and Contaminated Land centre was also a success story involving research management, policy support and operational advice. Defra is currently launching a set of small basin research areas based on a research platforms approach.

Mr. HARRIS summarised the basic elements of success for SPI as:

- ➡ being able to answer a couple of questions (who wants it, for what purpose, how they want it and when?) already at the formulation stage;
- ➡ the 8 "Cs" i.e. common language, context understood, connect across scales, conceptual

understanding, correlate timing, correct people and personality, continuity (people, facilities), and community building.

Example of SPI activity at the River basin level: the Rhône case

Didier GRAILLOT (member of the Zone Atelier du Bassin du Rhône (ZABR) board - Ecole des Mines de Saint-Etienne, Graduate School of engineering, FR) presented the Rhône river case where a permanent research system called "zone atelier" was implemented as a result of a call launched by the National Research Institute (Agence Nationale de la Recherche, FR) in 2001.

An observatory on the Rhône basin hydrosystem has been established with a scientific interest group supported by the Rhône basin authorities. 4 research themes have been defined, 3 targeted to technical topics and 1 related to social observation and governance. Specific small areas have also been identified along the river basin to conduct more detailed research along these 4 themes. The project was based on so-called "research actions". Their definition and

structuring were established in interaction with stakeholders: working in pairs between researchers and stakeholders allowed a common diagnostic to build the network necessary for these research actions, and ensure their follow-up.

Two examples illustrated the approach, the first was on groundwater to identify and quantify existing hydraulic exchanges between the surface and the sub-surface (hyporheic) zone. The second, Wetchange, developed a measurement tool for the wetland ecosystems' response to climate change induced low flow. This interdisciplinary project gathered different expertises from hydrogeology, geochemistry, and ecology and produced a synthetic interdisciplinary diagnostic of the Rhône aquifer exchanges. It is currently in expansion phase to become a national project called NAPROM.

The ZABR organised various enhancement actions: thematic days, exchange meetings, publications and public provision of good quality metadata on the website <http://metazabr2.lyon.cemagref.fr/geonetwork/srv/fr/main.home>. The ZABR

has developed a specific method to allow identification of gaps and possible improvements. It consists of a two axis graph combining geographical level and position in the SPI framework on which all activities are shown.

ZABR also acts as an interface between the multi-disciplinary scientific committee and territory stakeholders.

Derived from the experience of the ZABR and the discussion following his presentation, Mr. GRAILLOT made the following recommendations:

- ➔ a good practice is to associate decision makers and policy makers already at the beginning of the project (organisation of stakeholders) which helps identify the lack of knowledge, run collaborative research actions with clearly defined priorities, and make results available;
- ➔ SPI should be included in the research financing scheme and the peer review process. It should develop tools and skills indispensable for researchers and policy makers like EC research alerts to warn users on research in their field of interest, policy makers on new results available or even knowledge brokers;

- ➔ research provides tools and stakeholders need results: to allow uptake of research results at the river basin level, key factors involve a shared agenda and co-design of projects. Close connection to locally identified research needs is also necessary and only possible with an early involvement of communities and good mutual understanding;
- ➔ the river basin district authorities provide a good framework to keep the windows of opportunities open and allow for continuity in the process and long term planning.

Overall conclusion and main findings

Taking into account the presented examples and the intensive discussions during the plenary sessions it seems that to establish and maintain a solid science-policy interface is a reachable target. Moreover, it is recognised at all geographical levels that a permanent SPI activity is necessary whose key role would be to provide a framework for an efficient knowledge exchange. The main benefits would be to improve the link between research outcomes, and policy making, thus supporting a better



implementation of policies. This requires investing in specific skills, tools and methods for its effective implementation.

- Some key success factors are:
- ➔ the involvement of all the interested communities (scientist, policy makers, users) all along the research projects life on the one hand and in the policy implementation on the other hand;
 - ➔ the long term development of SPI activity with a close connection to WFD CIS structure and the river basin authorities;
 - ➔ new needs and issues emerge from current and future policies that have to be timely identified, clearly formulated

so that they can be appropriately addressed by research;

- ➔ the regular mapping of existing knowledge and research, and prioritisation of needs and gaps in knowledge to feed research programming;
- ➔ the development of supporting tools and frameworks to support the SPI activities in screening, connecting scientific results to policies at different geographical levels and scales, gathering knowledge and results and then targeting and disseminating them to the appropriate audience.

1.2. SPI experiences involving interactions among EU funded research projects and the CIS groups

This section addresses the combined presentations of research and applied projects examples, and the experience gained on science-policy interfacing and flows of information in some CIS Working Groups and Expert Groups. The outcomes of the panel discussions facilitated after each set of presentations are also summed-up.

Support of policy options of relevance to the Blueprint to safeguard Europe's water resources

Drought, from Science to Science-Policy Dialogue, 15 years of experiences

Wouter WOLTERS (DROUGHT R&SPI) presented the DROUGHT R&SPI FP7 project which addresses the situation as regards drought problems and the water availability in Europe. He stressed that changes occurred over time in the drought-related research projects with a shift from natural science to projects involving

science-policy interface issues as well. Among these, the DROUGHT R&SPI project established a drought dialogue forum and science-policy interfacing across various scales.

As a conclusion to his presentation Mr. WOLTERS raised the following points:

- ➡ there's a need to establish an interface between science and policy across the different scales of the policy implementation;
- ➡ although SPI is important at different levels it is easier to be implemented at the local scale than at the European one allowing a context-specific approach, the delivery of policy briefs being particularly important in that case;
- ➡ implementation of SPI activities and dialogue are further eased when focused and if the link between a research project or activity and the specific aspects of the legislation covered is clearly identified (for instance link to specific articles of WFD);
- ➡ SPI activities require the involvement of a stable community of actors from the two major parties, scientists and policy makers, and therefore

needs a permanent framework; Member States have an important role to play in this process.

Support of policy options relevant to the Blueprint to safeguard Europe's water resources 2012

Giuseppina MONACELLI (Expert Group on Water Scarcity and Drought (EG-WSD) presented first the context and mandate of the group that covers 7 tasks, including linking water scarcity & drought policies and strategies with research initiatives and the promotion of the use of appropriate technical tools.

The group worked in particular on the integration of water scarcity and drought policy into the Blueprint to safeguard Europe's water resources 2012. The SPI activity conducted within the group has helped to identify projects covering the same topic at different geographical levels and to structure the research activities within their interest. A classification in four groups had been proposed: water scarcity and drought indicators, technological tools, economics

and laws, climate change effects.

The conclusion of Ms. MONACELLI emphasised the following points:

- ➡ EG WS&D found it useful to express their needs for knowledge in a more structured way and based on reflexion; there was an added-value to be inside the process and to establish an experts network; the connection with the projects invited to present their results to the group was useful;
- ➡ since many projects do not focus on application at operational level or solving policy questions, there is a need to oblige projects to answer policy questions or address them in a targeted manner;
- ➡ the mapping of existing projects excluded the INTERREG and LIFE projects which should be improved if a next exercise were to be undertaken;
- ➡ it is important to ensure reaching the regional/local level with scientific information.

Conclusions from the panel discussion:

- ➡ at the EU level, three main actors are relevant for SPI: the River Basin District authorities, the national/Member State level and the CIS groups, and the European Commission (DG ENV and DG R&I in this context);

➡ from the experience gained, tools are needed but other things are also important such as dialogue, involvement of research and policy makers, common database or knowledge. There is also a need to produce common results: maps, documents such as policy briefs, etc;

➡ even though a lot of information is available it is often difficult to identify and follow the appropriate ones. The issue of effective awareness on existing knowledge is to be addressed (including production of policy briefs);

➡ for the future, closer contacts between CIS groups and research projects should be encouraged; current and new research needs identified within the CIS groups should be prioritised and sent to existing or prospective projects. DG RTD could act as a facilitator in connecting CIS groups and their research needs to currently running research projects and asking the projects to focus more on the needs of CIS groups. For future projects, these needs could feed the future calls or may be raised in the programmes;

➡ the sharing of information is crucial and the presentation of relevant research projects in WGs or the definition of clusters

of projects addressing the same topics should be continued and developed. The advantage is not only to help projects to exchange and communicate but also to make WG participants and researchers involved in projects aware that other projects covering the same topic are also running.

Support of the WFD implementation

The WISER research project, a support to the ECOSTAT Working Group

Daniel HERING (University of Duisburg-Essen, Germany) presented the WISER EU FP7 project which addresses integrative systems to assess Ecological Status and Recovery. The project has produced 105 publications, over 1200 pages and a series of data and databases mainly targeting a small audience of experts. In addition, it produced 20 key messages, a range of small factsheets, flowcharts and open databases. For ECOSTAT, information was jointly produced to address other geographical levels and types of audience.

WISER results were used to implement the German national system on ecological status. Among the difficulties in transferring the results to genuine users not originally involved in a research project, the two main aspects were the long and intense implementation phase needed (convince, adapt the product, communicate with users) and key obstacles to overcome (language, complexity, tradition, workload and above all communication).

Mr. HERING pointed out the following elements:

➡ experience shows that a successful transfer from an EU project to the national level requires time, additional national project(s) and meetings, and also to ensure the maintenance of, revision and training on the products;

➡ transferring the results among actors is hindered basically by two elements: the long and intense implementation phase needed and the obstacles in terms of communication;

➡ targeted project's products should be defined jointly by the project owner and products users and results should be presented in a simplified version (be creative in how to present the results). However the

implementation phase can be long and needs to be anticipated, including the need for products maintenance.

ECOSTAT Working Group SPI activity

Yorick REYJOL (ONEMA, SPI correspondent of Working Group on ecological status - WG-A or ECOSTAT) presented the SPI activity achieved in the WG-A.

The group identified 16 research issues in 2010 and with thorough discussion, including a formal consultation within the group, allowed selection of 10 priority topics. The WG-A's leader and SPI correspondent then identified a scientist for each prioritised topic who wrote a state-of-the-art scientific synthesis including knowledge gaps identification. The key motivations for these scientists to take part in this work had been the possibility to make use of previous productions of theirs, and the foreseen upgrading of these scientific syntheses as new scientific publications. It was clear that there is a need to find ways to attract people to take part in this process. In addition to this, some WISER experts were also experts of the



WG-A. This close relationship allowed fruitful work between this extensive research project (WISER) and the WG-A.

As for the future, interaction between WG-A and SPI activities and future research projects should be more formal and established on a regular basis. The SPI coordinator should be present at some of the WG-A meetings, the SPI correspondent should have a clear mandate to work on SPI activities in his/her roadmap, and SPI should be included systematically in all WG-A meetings' agendas.

The panel discussion that followed highlighted that:

➔ there's a need for continuity by officialising the work of CIS-SPI, which was maintained up until now by personal commitment

of the SPI correspondents; ➔ it's required to include SPI activities in the SPI correspondent's work plan as a fully recognised task among the activities of the expert, and to this end to get support of the organisation and the managers of the SPI correspondents; ➔ a clear mandate for a SPI activity is also required to help consolidate the involvement and balance with the mandatory work required from the involved experts; ➔ there's a need for water managers, including at the river basin level, to acknowledge the usefulness of SPI activities and their added-value;

➔ SPI correspondents are knowledge brokers and have a key role in transferring knowledge to design the programme of measures; in this role, they highly benefit from a parallel

involvement in other related activities and projects; ➔ many research projects are focused on products to solve local problems and do not include geographical extension at EU level or dissemination to make them visible at this level. Thus knowledge brokering activities need to address both national and EU levels and therefore can not be conducted solely by CIS groups; ➔ there's a need to develop a structured process at EU level to identify and perpetuate new and emerging research products that could support future EU strategies and activities.

As a conclusion to Mr. REYJOL's presentation and the discussion that followed, the following points were made:

➔ SPI should allow good interaction not only at EU level but also at national and River Basin District (RBD) level; ➔ there's a need for a clear and long term mandate for people and groups involved in SPI activities in the CIS structure and at national levels, in order to move from a situation where the work is done on a voluntary basis. DG Env may help in defining this mandate for the CIS groups by stressing the need to support

knowledge transfer for the CIS work and water managers need to recognise it is essential for their work; ➔ DG Env may help in defining this mandate by stressing the need to transfer knowledge and ensure that there's people at the edge between policy needs and scientific knowledge; ➔ policy leads objectives, policy makers set legislation with defined objectives, and research can support on how to reach the objectives and find the gaps.

Support of knowledge communication

IMPRINTS project: a flash flood alert demonstrator

Daniel SEMPERE (Professor at Centre de Recerca Aplicada en Hidrometeorologia, Universitat Politècnica de Catalunya, Barcelona and IMPRINTS project) presented the IMPRINTS project and its link with the Flodd directive.

Directive 2007/60/EC on floods defines the framework for flood risks assessment and management, and while significant progress was made on riverine floods that are in a time scale of days, flash floods (time

scale of hours) are still a main challenge. The IMPRINTS project was targeted to produce a prototype of an operational EU platform by combining research and practitioners expertise.

Based on six test cases, the project developed new forecasting methodologies and a platform prototype allowing anticipating a flash flood 24h to 36h in advance, produced videos and organised workshops and training.

Mr. SEMPERE emphasised the key issues IMPRINT focused on:

- ➔ scientific advancement is there but case studies show a need to improve communication and make it more efficient in addition to early detection and anticipation of consequences, to support decisions and acting;
- ➔ one question is to know how to transfer scientific advancements to society;
- ➔ the project made researchers and decision makers work together and organised some concrete training courses where implementers may directly learn from projects.

Floods Working Group SPI activity

Maria BRÄTTEMARK (European Commission - DG ENV policy officer for WFD and Floods Directive, co-chair of Working Group on Floods) presented the Working Group on Floods (WG-F).

WG-F has contributed to the implementation of the Floods Directive (FD) and its key concepts of prevention, protection and preparedness by allowing policy-led discussion on research priorities and providing compilation of research needs. The issue of research was raised at each WG-F meeting and the group maintained a permanent interaction with DG RTD with a view to providing the WG with information on ongoing flood-related research.

The WG also held thematic workshops gathering Member States representatives and projects partners to discuss together the different steps and technical aspects of the Floods Directive implementation. The WG acted as a platform for coordination and dissemination of the calls of the CRUE European Research Area Network (ERA-



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NET) focusing on flood research activities.

To conclude her presentation, Ms. BRÄTTEMARK emphasised that:

- ➔ there is a need for a policy-led review of research needs, and projects need to take on board needs and views thus expressed;
- ➔ there is a great need to better communicate between policy and research communities to have more responsive interaction and allow for improved implementation of the Floods Directive;
- ➔ flood managers should be involved in designing the projects; their further involvement throughout projects should help the development of outcomes useful for their day-to-day work;
- ➔ time scale and scope of research are important;

➔ flood risks management mobilizes not only scientific outcomes but also psychological aspects, or understanding of the public behaviour; research should work with a multi-disciplinary approach. Within the new CIS programme, WG-F foresees to hold more mini seminars where research projects will reply to specific questions asked by WG-F, and will focus on policy relevant results.

The panel discussion came to the following conclusions regarding SPI aspects:

- ➔ for the FD a new issue is identified consisting of the matter of “urgency” and “how to inform the public” for the good protection of people and goods; in the case of extreme events, decision makers have also to cope with uncertainty;
- ➔ SPI implementation is greatly



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Overall conclusion and main findings

All the above presentations and discussions supported the need for a future SPI activity in the CIS framework particularly in view of the new momentum that the Blueprint publication is expected to bring regarding WFD implementation for the next years and the new actions that will be necessary to put in place.

Overall, a closer link between research and policy at the European level brings many benefits and the interaction between CIS groups and research in the CIS-SPI ad-hoc activity has shown its added value. To enhance this link, DG RTD could steer the process by targeting financed projects even more towards addressing policy needs.

The presented cases of experience of the CIS groups with SPI have highlighted the following needs for a future SPI initiative:

- ➡ a good interaction at the different geographical levels from local to European, with a key importance of the regional level where the policy is implemented and research results demonstrated;
- ➡ an improved dialogue and

helped by common timeline between SPI activities within CIS WGs and research projects relevant for the WGs, and by a pro-active action in these WGs to identify projects of interest for the WGs activities;

➡ there's a need to improve the dialogue between science and policy; for effective and useful results, questions raised by policy makers need to be clear enough to be understood by scientists; this is a task for the WG-F: to raise specific question and to link with projects at the earliest stage;

➡ experts conducting SPI activities should better have a combination of different backgrounds (science, policy);

➡ EU projects should be followed by national projects to overcome national questions;

➡ SPI is useful to collect ideas and establish a strategy for researchers and policy makers at different terms; the renewal of the CIS programme is a great opportunity to implement this way of working.

communication between all the communities in a multi-disciplinary perspective with the help of knowledge brokers and associated tools, and the enhancement of the added value by producing common results involving the two communities;

➡ a structured approach to allow identify easily the appropriate information, including a complete mapping of existing and past research projects at all geographical levels;

➡ consideration of the further steps necessary to ensure that research results are successfully implemented in policy.

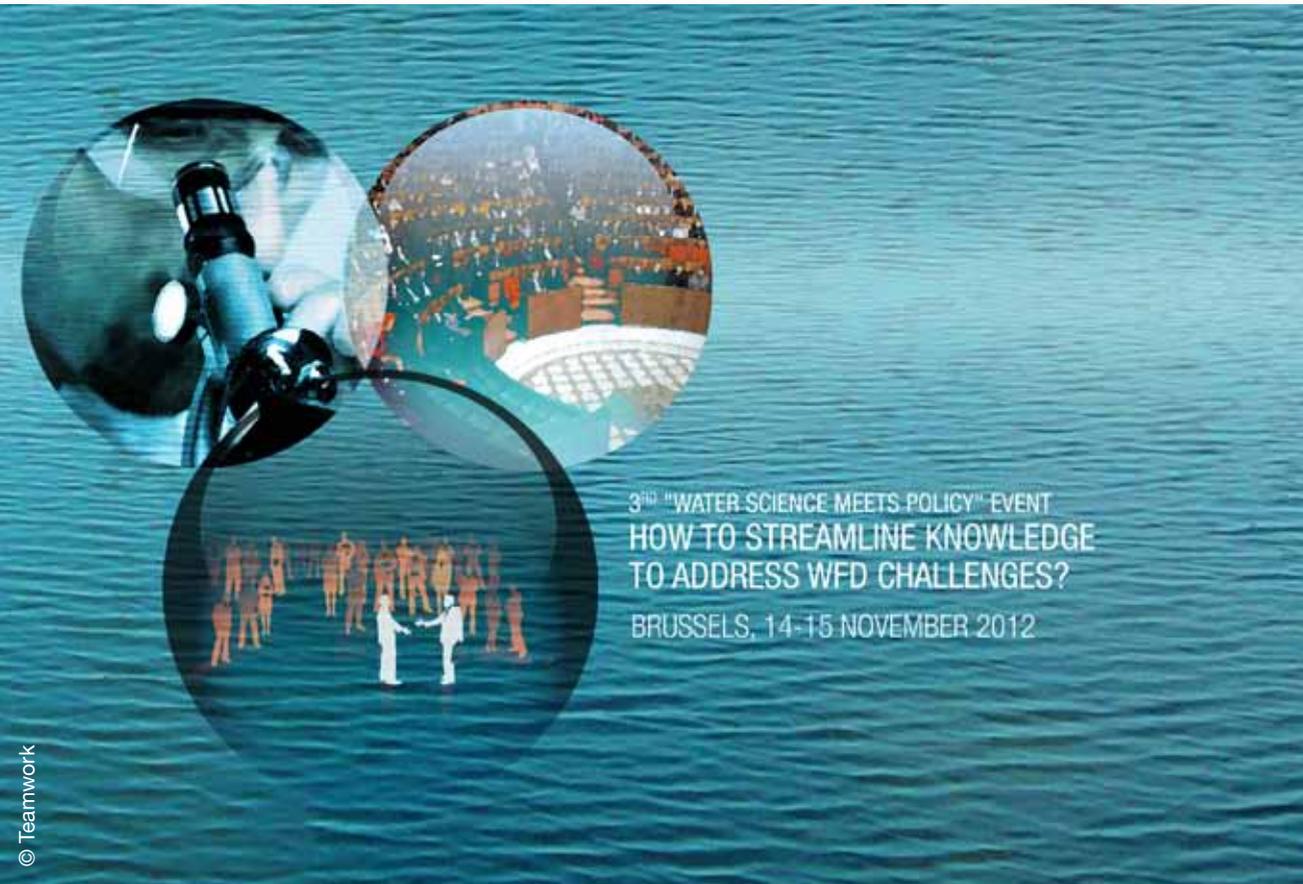
Furthermore, there's a need for a long term perspective for SPI activities within the CIS groups

as an indispensable process to allow progressive streamlining of research and policy activities and for the sharing of good practices and habits among the groups. Equally it's required to establish a sustainable SPI activity within the CIS framework based on committed people instead of an ad-hoc activity: such a move towards a more systematic activity to be successful needs to rely on sustained, dedicated, appropriately resourced and trained people acting as knowledge brokers (such as SPI correspondents) and having this activity in their roadmaps; knowledge brokering has to be recognised and rewarded to promote the emergence of skilled experts.



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a successful SPI: feedback from the workshop



3rd "WATER SCIENCE MEETS POLICY" EVENT
 HOW TO STREAMLINE KNOWLEDGE
 TO ADDRESS WFD CHALLENGES?
 BRUSSELS, 14-15 NOVEMBER 2012

Two sets of parallel roundtables of equal size and comprising a “balanced” mixture of participants’ profiles (policy makers and implementers, scientists, research funders etc.) were invited to address a set of key issues and challenges related to transfer and usability of research outputs. By providing ample space for discussion and exchanges, the objective of these roundtables was to take stock of the wide range of experiences among the participants and provide recommendations as to how the key issues and challenges raised by this workshop can be best and most effectively addressed. Each roundtable had a facilitator animating the exchanges among the participants and facilitating the emergence of some commonly shared recommendations regarding “responses” to the issues raised, and a rapporteur for a feedback to the plenary session.

On the first day, the focus was upon the first two objectives of the workshop, namely demonstrating the added value of science-policy interface and the possible structures, mechanisms and actors needed to ensure an active, continuous, dynamic and sustainable science-policy interface in the CIS. On the second day, the focus was upon the 3rd objective of the workshop, namely the methods and tools for knowledge brokering and “customisation” of the information to address the users’ needs at the various levels (EU, national, river basin), including cross-scaling issues, and realistic ways of addressing them within the current CIS structure.

The main objective of the roundtables was for the participants to identify recommendations related to the CIS-SPI activity functioning. The highlighted recommendations were presented during plenary sessions and discussed at the final panel consisting of the SPI correspondents.

This section gathers the main findings resulting both from the break-out sessions and the discussions that followed in plenary sessions.

2.1. Demonstration of added-value and benefits of SPI

The participants had to discuss how the benefits and potential of a continuous and sustained SPI activity can become more visible and acknowledged among all actors involved in the implementation of the WFD, its daughter Directives and the Floods Directive. All groups agreed that there is still a great deal of development to be achieved in order to render the SPI activity's added-value more visible. The recommendations expressed can be sorted out in three domains.

Improve transfer and adaptation of knowledge

The fragmentation of available information on scientific projects represents a real problem; often information is only on specific project-related websites. In order to solve this problem, several suggestions had been made:

- ➔ the production of specific SPI literature (e.g. synthesis reviews, synthetic information papers, Policy briefs and Benefits Fact Sheets including communication on the added value of each project) delivered

frequently to policy makers would significantly contribute to a better visibility in the field of the scientific community;

- ➔ create a set of Policy makers standards for the communication of projects' outputs and what they provide relating to the added value of projects.

- ➔ information gathered on the occasion of the SPI activity should be rendered more easily accessible and available for longer. Besides projects' descriptions, these "results" should also be placed in a repository in order to make them available for future use. All EU funded projects should have their websites on the EU server for continuation of knowledge transfer.

SPI is addressing mainly applied research the results of which can be used for policy. Nevertheless, there's still a need to better identify policy question(s) the projects are targeting and the research outputs (expected and final) of relevance to the policy. The research evaluation systems should better reflect the impact of research on policy and the cost of no action.

Create and rely on a "community of practices" to bridge the gap between science and policy

Language barrier between regulators and researchers has been identified as one factor hindering the visibility and therefore the recognition of the SPI activity. There is a need to find a common language between these communities. Participants stated that not only translation is needed at each level and at each stage of the project, but a continuum of understanding and communication are also needed. Trained people who understand science and can communicate it accordingly to the audience (these people are not necessarily researchers) are key actors at each stages. The role of skilful knowledge-brokers has been indisputably put forward. Emphasis was also put on the role of training and education for future researchers.

Adapt research outputs to the needs

Added-value of co-creation of research agendas by both research and policy sides has been stressed. It was suggested that a priority list of research topics should be agreed between researchers and funders and regulators. The need to be flexible to adjust the research plan by listening to the user needs has been stated. While giving priority to demand driven research the blue sky research should not be excluded.

Research funding organisations need to pinpoint to related policies, to use societal impact evaluation criteria and support knowledge brokerage even after the projects ends.

Finally it has been pointed out that not only brokerage from science to policy was needed, but also the real background of the policies needed to be rephrased to make researcher and public equally aware of what the policies were meant for.

2.2. Recommendable structures, mechanisms and actors to enhance SPI in the cis context

Structure

All participants agreed that the most important factor to enhance the SPI activity in the CIS context is to make it a permanent activity instead of an ad-hoc one.

A transversal and coordinating SPI activity is needed within the common implementation strategy. And within each CIS group, the issue of research should formally and regularly be addressed, linking to an expansion of the scope for the SCG to include a research component.

As for the implementation of the WFD, a better integration of the various funding mechanisms (FP, LIFE+ and INTERREG) would allow a structured approach in which LIFE and Interreg could help disseminate research results.

The development of demonstration sites would also help convince end users and policy makers of the added value of research results produced by projects. Also, existing forums (e.g. World Water Forum) should be used as mechanisms to enhance SPI.

The participants stressed the importance of establishing SPI structures at the national and river basin levels, recognising the need for allocation of appropriate resources to implement this.

Mechanisms

Most importantly, participants agreed that the unique, “all in one” character (overall access to information on research, policy needs, and results of the utilisation of the SPI activity in specific cases) should be

emphasised. This complex role should also be embedded in the everyday representation of SPI, i.e. communication framing and interaction should be primary objectives. To this end, interactive websites with umbrella-like function would be welcome.

Effort (including time and funding) should be put on assessment of existing research, as well as awareness raising on existing tools and research outputs. Updating of the prioritisation of research issues to be addressed should be another key activity as it was proved of great value to both, research and policy communities.

There's a need to conduct training sessions, to organise workshops and open day visits to communicate and bring out research results towards the end users and stakeholders.

A set of tools to access research, policy needs, accessible abstracts translated in all languages, analyses on how research has been used would be useful, and a standardisation of them including the development of a common language or knowledge portals allowing for a better integration of SPI in the

running projects and policies. Twinning between past successful projects on SPI aspects and currently running projects should help spread good SPI practices out.

Further suggestions included the involvement of the SPI community in the development of the EU research agenda in order to allow clear connection between science and policy needs.

Actors

In order to enhance the impacts of SPI it is recommended to better target end-users by developing SPI skills within all the involved communities, especially by including specific education sessions, or to promote interdisciplinary approaches including social sciences as well.

As for specific projects, end-users and stakeholders should be involved in them right from the beginning of the projects and throughout their life to make it possible to influence the scope of these projects, ensure information consistency and long term availability. Further benefit would be the systematization



of the dissemination plan and promotion of better mutual understanding of the specific policies and their targets for both the public and the research community.

Participants recommended establishing and maintaining a permanent network of experts acting as knowledge brokers

between CIS involved actors. To achieve this it's important to embed SPI activity in the overall work of the CIS groups through a clear mandate so that SPI is a regular point in the WG meetings and thus allow for a continuous and systematic follow-up. By doing so, their SPI correspondents would take part in this permanent SPI network.

2.3. Methods and tools for knowledge brokering in the CIS structure

Methods, ground rules

First of all, participants widely agreed that communication needs to be targeted, delivered in time and in a user friendly way.

A better integration of the different geographical levels and interactions between them is necessary to allow the increase of the SPI impacts. It can be enhanced by implementing a knowledge brokering process at all levels, by supporting an active interaction between researchers and policy makers (discussions, participation in Advisory Board groups, dissemination activities) funded in parallel to research. A balanced project consortium (researchers, science communications pro, and social scientists) may

facilitate the project's knowledge brokering. Early involvement of and exchange between the various stakeholders groups involved (scientist, policymakers, stakeholders and politicians) is needed.

Also opening the access to research and policy data and information, or promoting targeted and customised communication and the creation of communities of practices are recommended.

Furthermore, it is recommended to establish specific funding mechanisms to support knowledge brokering, including direct contacts between policy makers and scientists, or use the existing ones but targeting knowledge brokering.

Knowledge brokering has to be recognised and rewarded to promote the emergence of skilled experts.

Tools, format, content

As for the format, content and level of details, the developed systems should allow an easy understanding by non experts which needs simplification, standardisation, timely information (with regular updates). Information must be easily accessible.

Tools to deliver information should be defined with end users themselves, avoiding a "one size fits all" solution. It's recommended to mix tools such as open days, workshops, WISE-RTD; use all possible tools from formal written material to informal exchanges.

In particular, participants stressed the importance of considering organisation of

thematic workshops on a regular basis to address specific scientific questions and to maintain the contact between policy and science.

There is a need to create a reflex on where to find the information. This could be better achieved by the creation of the previously mentioned umbrella website, including all SPI-related information and addressing all geographical levels as well as functions of professionals involved. However the wide number of potentially involved actors does not allow for the development of a fully harmonised and integrated system and requires the development of customised tools adapted to the targeted audiences.

In addition the participants stressed the usefulness to ensure that operational syntheses are translated in all EU languages.



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3

Concluding remarks as to

the way forward for CIS-SPI



All the presentations, break-out sessions and discussions that took place during the 3rd CIS-SPI event led to draw some concluding remarks and recommendations as for the possible follow-up of a SPI activity within the CIS framework.

3.1. How to make SPI beneficial: main recommendations from the workshop

SPI activity can bring clear added-value. This can be achieved by following the recommendations that emerged from this 3rd CIS-SPI event presented below.

Improve transfer and customisation of research outputs to make them easier to access and understand by the policy makers and water managers

Customised documents such as “benefits fact sheets” are a means to improve the take-up of knowledge by policy makers by clearly stating the added value of the projects. Summarising the research information generated by the projects and making them easily accessible through a more central repository would be instrumental in ensuring transfer of knowledge. This should be in addition to the project websites and should be seen as a more sustainable store of information.

The research outputs (expected and final) of a project and the cost of no action should be better identified. An evaluation system of the project impacts and a better identification of policy question(s) the projects are targeting should be included in the research assessment.

Create a community of practices and improve standardisation to bridge the gap between science and policy

In order to avoid the language barrier between regulators and researchers, there is a need to find a common language between these communities. Moreover, to facilitate understanding and communication, trained-people (such as skilled knowledge-brokers) who understand science and can communicate it accordingly to the audience are key actors at each stage, as well as training and education of future researchers on SPI.

Adapt and adjust research topics to the policy needs

The research agenda should be adjusted to the users' needs to give priority to demand driven research (while basic research should not be excluded), keeping in mind the added value of co-creation of research agendas by both the research and policy sides. Research funding organisations need to pinpoint to related policies, to use societal impact evaluation criteria and support knowledge brokerage even after the projects ends.

Finally, not only brokerage from science to policy is needed, but also the real background of the policies need to be rephrased to make researchers and public equally aware of what the policies are meant for.



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3.2. Factors for success of SPI in the CIS: structure and operational modalities

Operational modalities

The following recommendations can be drawn from the workshop about what should be done to improve the SPI in the CIS framework in terms of operational modalities.

Enhance involvement of stakeholders at different levels

National and river basin levels should be involved at different steps in the project.

The association of decision makers and policy makers from the beginning of the projects targets the identification of knowledge gaps.

The involvement of stakeholders allows running collaborative research actions with clearly defined priorities.

Knowledge brokers and associated tools may help improve dialogue and communication between all the communities in a multi-disciplinary perspective.

Three main actors are relevant for the SPI in the EU context

These are the River Basin District authorities, the national /Member State level together with the CIS groups, and the European Commission (DG ENV and DG RTD in this context). The River Basin District authorities provide a good framework to keep the windows of opportunities open and allow for continuity in the process and long term planning.

Ensure close connection between European projects and the CIS groups

A close connection between projects and policy makers can be supported by dedicated tools and mechanisms in order to provide scientific information to policy makers and also get feedback from them. The development of demonstration sites would also help convince end users and policy makers of the added value of research results produced by projects,

providing the evidence base to convince policy makers.

Working principles and actors

As for the structure or working principles and actors, the workshop highlighted the following points.

A sustainable activity involving knowledge brokers

The most important factor to enhance the SPI in the CIS context is to make it a permanent activity based on committed people instead of an ad-hoc activity. Such a move towards a more systematic activity to be successful needs to rely on sustained, dedicated, appropriately resourced and trained people acting as knowledge brokers (such as SPI correspondents) and having this activity in their roadmaps. Knowledge brokering has to be recognised and rewarded to promote the emergence of skilled experts.

SPI as a working principle

SPI should be a CIS working principle spread across all

levels of the CIS supported by a SPI-network involving SPI correspondents closely connected to the works of the CIS groups and the overall CIS structure. It would be useful to give a clear mandate to CIS groups and their SPI correspondents to engage in a continuous and systematic appropriation of SPI-related activities and have SPI as a regular point in their meetings agendas as well as cross-CIS groups meetings to share SPI practices.

Mechanisms and tools

Useful mechanisms and tools were also identified.

Knowledge brokering

Knowledge exchange has to be a continuous process and its usefulness shared by all involved actors, including closer contact between CIS groups and research projects.

A set of tools to access research, policy needs, and accessible abstracts would greatly facilitate this process.

Transfer and sharing of knowledge should be enhanced through tools, methods and guidance.

All information must be easily accessible including tools to deliver information that should be defined jointly by the research community and the end users.

A central repository could elaborate on the most promising ways to disseminate scientific information such as thematic syntheses, policy briefs and “benefits briefs” for the implementers.

Better integration of the scales of relevance to the policy and management within the SPI process will allow to increase the impacts of the SPI on them and better account for the interactions between them. It can be enhanced by implementing a knowledge brokering process at all levels.

To support the SPI process the organisation of thematic

workshops focused on specific scientific questions should be organised on a regular basis. This will also ensure the maintenance of contacts between policy and science.

To assess existing research and research gaps

Effort in terms of time and funding to assess existing research, raise awareness on existing tools and research outputs should be continuous as they are all key activities with a clear added value for both the research and the policy communities.

A methodology for regular mapping of research and prioritisation of gaps should be developed to regularly feed research call programming at EU and national/regional levels.

3.3. The possible way forward for CIS-SPI

Based on these discussions and recommendations, a structured SPI mandate as well as a work programme with some key activities can be established.

To start with: some basic principles

This future activity in the CIS may be based on the following basic principles:

- ➔ establish a better acknowledgement of sustainable science-policy interfacing within the CIS framework;
- ➔ base the SPI on a network consisting of committed people being able to dedicate the necessary time and resources on the SPI-relevant tasks and facilitated by identified SPI-leaders;
- ➔ ensure a continuous update of the needs is undertaken with some tasks (e.g. knowledge transfer and expression of needs) regularly carried out;
- ➔ support a continuous communication between policy makers, WFD end-users in particular at the river basin level, and the scientific community.

Tasks to be implemented on a regular basis

Transfer of existing knowledge and communication of research outputs to the CIS groups and the river basin level

The first task here is to enhance the assessment, transfer and sharing of knowledge and experience relevant to the CIS themes. This should include

the development and testing of various tools and methods to facilitate and enhance this transfer of knowledge.

Secondly this process needs to be repeated at the national and river basin levels. It is felt that involvement of and connection with the river basin level should be set as a priority. To support this, easy access to information should be provided through the support of a permanent website and/or social network tool (e.g. European Water Community, WISE-RTD)

Identification of needs for information, matching against existing knowledge, identification of research gaps and communication

The formulation of the policy relevant challenges/questions to be addressed should be done in such a way that they may be easily understood and taken on board by the researchers. Thus, there's still work to be done on:

- ➔ assisting policy makers in formulating the right scientific and technical questions;
- ➔ keeping policy makers committed and interested in

the research projects throughout their implementation;

- ➔ keeping the on-going research aligned to the policy needs and if needed adjusting the research direction accordingly³.

A SPI activity should ensure a regular and systematic mapping of existing research activities and an assessment of priority research needs expressed by the CIS: the remaining research gaps should then be passed on to research funding organisations for follow-up.

The activity must contribute to improving the research outputs dissemination and up taking within and among the CIS groups and river basin levels. What is still fundamentally needed is a continuous process to:

- ➔ summarize the outcomes of the research;
- ➔ translate these outcomes in a language easily understood by the policy-makers and;
- ➔ transfer these outcomes to the policy makers and the implementers at the river basin level.

Working principles for SPI in the CIS

SPI should be recognised as a working principle and one operational objective of the CIS in general and the CIS groups in particular

A decentralised SPI activity

The SPI activity should be decentralised within each CIS group. It should rely on identified and committed people constituting a SPI-network and based on roadmaps clearly indicating their responsibility as a SPI correspondent/actor or knowledge broker acting on the behalf of the CIS groups, at the SCG level or as national SPI focal points ; these people should be assigned to contribute in and facilitate the implementation of the SPI activity (needs assessment, existing knowledge assessment, and transfer of knowledge) on a regular basis.

³ Such prioritization would feed continuously into the implementation of the Horizon 2020 - the next EU Framework Programme for Research and Technological Development for the period 2014-2020 and the Joint Programming Initiative on water which is currently being elaborated and will be implemented by the owners and managers of the water-related national research programme from 19 partner countries (www.waterjpi.eu).

SPI as a regular agenda item

SPI should become a regular point in CIS groups' meetings agendas: each CIS group should dedicate a point on research and development if possible at each CIS group meeting to promote knowledge transfer (so that projects may be presented to the group; see also below "working principles for the research community"); this task should be overseen by the CIS group leaders and SPI correspondents with the assistance CIS-SPI activity co-leaders if needed.

Cooperation and exchange

A stronger cooperation/exchange between and within the CIS groups should be encouraged to share existing knowledge practices and experiences and also to establish stronger links with the SCG. Also, stronger relationship and interactions with the national SPI correspondents/focal points are to be sought.

Workshops

Dedicated workshops to make projects and policy makers meet on a specific scientific topic or CIS thematic should be organised. Yearly CIS-SPI "science meets policy" events may also contribute

to bridging the gap between science and policy within the CIS framework.

The CIS groups' work should be supported by an overarching CIS-SPI

An overarching CIS-SPI activity may be in charge of:

- ➡ animating the SPI-network and ensuring the production of state-of-progress of the activity for the SCG and the Water Directors;
- ➡ gathering the research gaps identified by the various CIS groups and streamlining them to DG Research and Innovation and water EIP and JPI;
- ➡ informing CIS groups about relevant RTD projects and oversee that close links are being maintained between them and facilitating the transfer of this existing knowledge;
- ➡ in close connection with the CIS groups, regularly organising "water science meets policy" events focusing on the CIS group's topics such as forum where expression of needs and sharing and transfer of knowledge may be facilitated;
- ➡ ensuring that research projects produce regular policy briefs; transferring them to the

corresponding CIS groups themes, and encouraging their stocking in one unique electronic location easily accessible by policy-makers and implementers at the national and the river basin levels;

- ➡ regularly organising state-of-the-art knowledge dissemination meetings back-to-back to the SCG meetings;
- ➡ elaborating communication tools for communication on CIS-SPI activity and maintaining a virtual network;
- ➡ establishing and disseminating regular information on CIS-SPI activity (e.g. newsletter).

Working principles for the research community

The research projects (in particular those funded by the EC) should be encouraged to follow some working principles.

They should provide at the very beginning of their implementation to the policy makers (in particular CIS groups) a one-page e-mail or document consisting of a concise project summary, contact details and expected outcomes and benefits to the policy makers.

During their life, projects should maintain continuous interaction with the CIS groups and other end-users and produce regularly updated policy briefs (in English and the different languages of the project). All those policy briefs should be uploaded at a repository easily accessible (electronically).

A recommended template for such a policy brief has been established by CIS-SPI activity (see template proposal in the CIS-SPI full report). It should be made mandatory for the EU-funded projects.

Enhancement of research outcomes up taking by users at the river basin level should be sought. To this end, presentation of projects' outputs addressing policy makers and WFD implementers should be regularly organised (may be in the frame of CIS groups regular meetings).

Contributions to the workshop

In the following sections, the summary of each presentation is given combined where necessary with a set of illustrations from the presentation. Recommendations of the break-out sessions are also listed, and the link to each presentation is provided.

All presentations given during the workshop are available on ONEMA's website :

<http://www.onema.fr/IMG/EV/cat1a-21.html>

and on CIRCABC's dedicated folder:

https://circabc.europa.eu/sd/d/4ad08b48-88b1-4504-ab50-c3929adea20d/3rd%20CIS-SPI%20event_Presentations%20PDF%20.zip

key points addressed during discussions



4.1. Workshop's introduction

Mr. Christos FRAGAKIS *Deputy head of unit Management of natural resources EC DG RTD*⁴

The CIS-SPI ad-hoc activity is a mandated activity operating within the WFD CIS structure and endorsed in 2009 for the period 2010-2012. It's co-led by DG RTD and ONEMA and has a close connection to the CIS working groups and expert groups. The key objectives of CIS-SPI ad-hoc activity are to support the WFD implementation through a dynamic interface between the involved actors, and by boosting usability of scientific research outputs and identifying research needs and questions. The 3 specific CIS-SPI ad-hoc activity's tasks are:

- ➡ inventory of research and implementation needs from CIS groups;
- ➡ available research and research gaps assessments;
- ➡ improving transfer and usability of research.

CIS-SPI ad-hoc activity mandate also includes annual events where water science meets policy.

Mr. FRAGAKIS emphasised the need for robust and practicable recommendations regarding tools, practices, methods, modalities, mechanisms and actors to promote an effective SPI. He then reminded the audience as to the aim of the event, namely to reflect, exchange ideas, share experiences and get the

⁴ http://www.onema.fr/IMG/EV/seminaires/Presentations_PDF_CISSPI/Opening%20Fragakis.pdf

maximum feedback possible from the audience on their experience regarding structures, best practices and tools that need to be put in place to ensure a dynamic and sustainable science-policy interface in the context of the CIS-SPI activity. He then explained the way that the event had been designed and the rationale behind it in order to optimise its contribution to the event's objectives. First, the plenary session with keynote speeches about success stories should help identify the enablers and the inhibitors in the SPI process. Then 4 roundtables/break-out sessions would address the same topics. In assigning participants to the various roundtables, an effort was made to ensure a balanced mixture of participants' expertise to provide room for exchanges and come up with realistic and practicable recommendations. Finally, the panel session should help open interactions among panellists and participants to facilitate synthesis, fine-tuning and selection of the most promising options.

Mr. FRAGAKIS highlighted the great challenges raised since off-the-shelf solutions in order to get an effective CIS-SPI operational structure

do not exist. Therefore the active participation and contribution of the participants is essential in providing recommendations that will serve as a basis to build a proposal for the continuation of this SPI initiative.

Ms. Manuela SOARES (*Director of the Environment Programme, DG RTD*) thanked the audience for their participation, and expressed her great satisfaction for the variety of backgrounds and expertise among the participants, coming from research to University or administration, from local to European and from private to public level. This variety is essential for a successful SPI.

She noted the great challenges in any SPI activity and even more so in the CIS-SPI where interactions and dialogue between the multiplicity of stakeholders involved in the water resources management at different levels (EU, national, regional, catchment) are required. She reminded that the European Union has invested 1.3 billion Euros over the last 10 years on water research (in FP6 and FP7). Research has been successful in terms of number

of publications and results. However, still a lot more needs to be done in the field of exploitation, dissemination and communication of research results, especially towards stakeholders and policy makers. Although each research project is expected to set aside resources to this end, this one-shot type of activity limited to the duration of the project cannot guarantee a continuous and timely transfer of research results, which should be the role and purpose of a continuous and stable SPI activity in the WFD CIS context. She thanked the CIS WGs and EGs members and the SPI correspondents for the time and effort they invest in this challenging activity.

Good science is vital for good policy and good policy is necessary for good science, said Ms. SOARES. The Environment Council recognised the need for improving the science to policy interface in order to improve evidence-based decision-making and assist governments in launching more relevant water-related policies. In the Commission's proposal on Horizon 2020, the new framework programme for research and innovation, water

will constitute a key research issue, and because of its cross-cutting nature, it will be supported under various funding schemes and instruments by all three distinct but mutually reinforcing objectives: excellence in the science base, creating industrial leadership and competitive framework, tackling societal challenges. Communication and dissemination of research outcomes will make up an integral part of all actions supported under Horizon 2020, with specific emphasis on open access to research publications and projects data.

Ms. Manuela SOARES concluded by stressing that the final outcomes of this event will serve as a basis to establish recommendations which could enhance the overall efficiency and effectiveness of the CIS-SPI activities.

Mr. Patrick FLAMMARION (*Director for Research and Development at the French National Agency for Water and Aquatic Environments, ONEMA*) highlighted that this workshop had been the third of this kind.

The first one, in 2010, gathered 150 participants and allowed

identification of 180 research issues. The second, in 2011, gathered 110 participants and focused on ecosystem services; it made the first steps towards a common language among scientists and stakeholders at EU, national and river basin levels on this topic. The third event's main target is to see how science-policy interface should work to ensure the operational goal to have and maintain a two-way communication between science and policy. Two main aspects are at the core of SPI activity: the link between good science and good policy, and the need for continuity. ONEMA is acting as a SPI for water domain in France.

For CIS-SPI some big challenges still exist especially on the transfer of results to the users, including these at the river basin level. This improvement of knowledge dissemination is a great challenge that would benefit the achievement of the new policy options arising from the Blueprint to safeguard Europe's water resources.

Mr. FLAMMARION confirmed ONEMA's interest in this SPI work to be continued in the WFD CIS.

Mr. Peter GAMMELTOFT (*Head of Unit D1. Protection of Water Resources, DG Env*) emphasised the need to rely on quality science for water. He stressed that SPI is essential for the WFD implementation: it is equally important for policy makers at the national level and also for implementers at the river basin level.

The SPI activity within the CIS, focusing on the idea of common work between the Member States and the authorities of the EU, has started in 2008, and it had officially been introduced in the CIS plan of 2010-2012. This decision resulted of an agreement made at the beginning of the CIS activity in 2001.

The fitness check run within the Blueprint to safeguard Europe's water resources development showed the need for adequate reinforced knowledge. It proved the need to continue SPI activity within the CIS structure to ensure knowledge base and transfer.

In drawing attention to the findings that show the need for an operational SPI in the CIS, Mr. GAMMELTOFT stated the workshop would give inputs on

what have to be established and how to make water a priority for research, or how to improve the link with agriculture.

For Mr. GAMMELTOFT, situation between science and policy is similar to a border: there is a need for a bridge. In particular in these times of economic crisis the funding for science and establishing SPI is no longer automatic and we have to justify and deliver real added-value. Effective communication between the different levels is needed together with collective efforts.

Mr. GAMMELTOFT stressed that we need to look at already existing best practices and how to improve them, including at the river basin level. There's a need to improve availability of technology and relevant science for the development of the 2nd RBMP. In this context the recommendations of the 3rd CIS-SPI workshop should be considered carefully.

The first plenary session was chaired by **Mr. Arnoldas MILUKAS** (Head of Unit Management of natural resources - DG RTD)



4.2. Key note speech 1 - examples of SPI activities at the European level

Example 1 - The WFD CIS-SPI ad-hoc activity: State of progress and lessons learnt during the period 2010-2012⁵

Michel SCHOUPPE (European Commission - RTD); Frédérique MARTINI (ONEMA)

In December 2009 the Water Directors of the European Union established an ad-hoc activity on Water Science-Policy Interface (CIS-SPI ad-hoc activity) under the Common Implementation Strategy (CIS) of the Water Framework Directive (WFD). The CIS-SPI ad-hoc activity aims to establish working relationships among research projects and WFD implementers. It has been jointly led by the European Commission (DG RTD) and France (ONEMA) and has worked in close connection with the CIS working groups and expert groups through the SPI correspondents nominated by each CIS group, and with the SPI correspondents nominated in addition by some European countries.

The CIS-SPI ad-hoc activity mandate 2010-2012 includes 3 tasks:

- ➡ task 1: inventory of research and implementation needs from CIS groups;
- ➡ task 2: mapping of relevant available research and identification of research gaps;
- ➡ task 3: improving transfer and usability of research.

Furthermore, the organisation of yearly CIS-SPI ad-hoc activity events “Water science meets policy” was explicitly included in its mandate with a view to improving communication between the two communities (see Figure 4).

Task 1 - Inventory of research and implementation needs from CIS groups

A list of 180 research needs corresponding to the CIS themes was drawn up at the 1st CIS-SPI ad-hoc activity event (2010). It was passed to the European Commission and other water-related on-going

European initiatives (Joint Programming Initiative (JPI) water, European Innovation Partnership (EIP) water) so that they can take stock of this information in planning their future research agendas and activities. The need for knowledge to underpin the implementation of the WFD also served as an additional input to DG ENV at the time when the Blueprint to safeguard Europe’s water resources was being developed.

Moreover, a prioritisation exercise was carried out in close collaboration with the CIS groups. This exercise resulted in a more precise list, comprising around 10 priorities for each CIS group.

Task 2 - Available research and research gaps

Based on this prioritised list of research needs a systematic overview of existing EU (and nationally less widely) funded research projects has been undertaken to identify research gaps.

This exercise showed that most priority research needs identified by the CIS groups are already partially covered to a certain degree by one or several existing research projects. Only a few of remaining gaps were identified. This shows that substantial amount of existing knowledge and state-of-the-art research

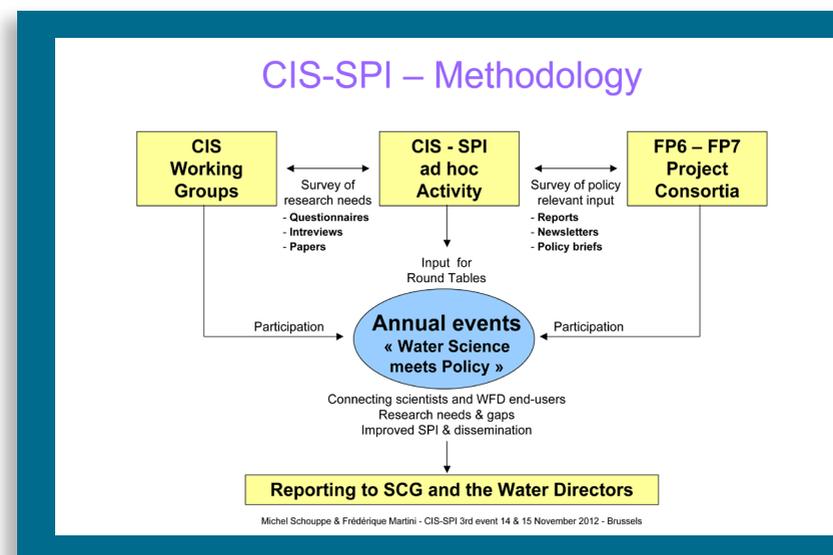


Figure 4. Working principles and connections of CIS-SPI ad-hoc activity

⁵ http://www.onema.fr/IMG/EV/seminaires/Presentations_PDF_CISSPI/1-Schouppe_Martini_The_WFD_CIS-SPI_activity.pdf

findings are not finding their way through to the policy implementation and are not being adequately appropriated by the CIS groups. Also the wording of research needs may sometimes not be precise enough to allow for a more precise guidance to the relevant research outputs. This proved the need for:

- ➔ regular exercise of prioritisation of research needs based on an improved method;
- ➔ improvement of policy questions to be addressed by research, notably by making the link with policy milestones (or WFD articles).

Task 3 - Improving transfer and usability of research outputs

The first two yearly “Water science meets policy” events - “Water science meets policy”, 2010 and ‘Implementation of the WFD: When ecosystem services come into play”, 2011 - focused respectively on the identification of research needs associated with the implementation of the WFD, its daughter Directives and the Floods Directive, and the transfer of knowledge related to the use of the ecosystem services approach in the context of the implementation of these directives (Reports are available on CIRCABC⁶).

The 3rd CIS-SPI ad-hoc activity event - “Water science meets policy: How to streamline knowledge to address WFD challenges?”, 14-15 November 2012) will focus on how to improve the transfer and usability of the research outputs and promote knowledge-brokering practices as well as operational structures to streamline their implementation.



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CIS-SPI ad-hoc activity has gathered policy briefs from existing projects, and published them on CIRCABC. And a recommendable policy brief format has been elaborated by the CIS-SPI ad-hoc activity.

However, there’s still a need:

- ➔ to circulate research projects summaries and impose policy briefs at all steps of the projects from the beginning;
- ➔ to gather associated policy briefs in one unique resource-platform;
- ➔ to support SPI events organisation at the CIS groups level to improve knowledge dissemination;
- ➔ to invest in process and tools for a sustained knowledge brokering;
- ➔ to even more improve knowledge dissemination to and appropriation by the CIS groups;
- ➔ for a real “SPI identity”.

Two main recommendations from CIS-SPI ad-hoc activity 2010-2012

First, to move from an ad-hoc experience of SPI towards a more operational science-policy interface relying on:

- ➔ involvement of designated and committed SPI correspondents in the CIS structure;
- ➔ recognition of science-policy interfacing as a working principle of CIS;
- ➔ exchange of best practices and experiences regarding science-policy interfacing among the CIS groups.

Second, to continue the work of science-policy interface in order to:

- ➔ enhance transfer and sharing of knowledge and experience



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⁶Communication and Information Resource Centre for Administrations, Businesses and Citizens

relevant to the CIS themes through the CIS;

➡ test various tools and methods to facilitate this transfer of knowledge through the CIS structure;

➡ ensure a regular and systematic updating of research needs from the CIS to be passed on to research funding organisations.

Example 2 - Answers, experiences and impacts of SPI activity in the Working group on chemical aspects (WG-E)⁷⁻⁸

Robert KASE (Swiss Centre for Applied Ecotoxicology, CH)

The full report is available on CIRCABC: Science-Policy Interface (SPI) activity on prioritisation of research needs, knowledge availability and dissemination for

the Working Group E (Chemical Aspects) 2010-2012⁹.

The starting point for the activity for research needs prioritisation was a short questionnaire to the CIS Working Groups in 2010 regarding research needs. The responses provided the basis for discussion at the 1st “Water Science meets policy” event held by CIS-SPI on 30 Sept. 2010 in Brussels. This had the objectives of connecting scientists and WFD end-users, identifying research needs and improving knowledge dissemination.

Overall, 59 research areas and 180 specific research issues were identified as relevant. The areas and issues relevant to WG-E were summarised in Round Table document No. 3 prepared by Ulrich Borchers (IWW Water Centre, DE) and Jaroslav Slobodnik (Environmental Institute, Kos, SK). This

document provided a “working” list of 23 relevant research topics, which was used in a further prioritisation exercise in WG-E.

As mentioned during the 1st CIS-SPI event, the lack of dissemination of available research outputs leads to a real risk that some of the research needs identified might already have been met. It is therefore important to identify as much available knowledge as possible before proceeding with further research prioritisation. The RT-3- tried to carefully “filter” research and development needs expressed by WG-E and the other contributors on the basis of existing or on-going scientific knowledge. However, a further evaluation of existing knowledge and a prioritisation based on the real (remaining) needs of the policy makers and

implementers was considered necessary before establishing a final inventory of future R&D needs. WG-E members were therefore asked to contribute to a compilation of knowledge relating to the topics initially prioritised.

Questionnaire to WG-E members 2011

The list of 23 topics from the September 2010 SPI event was used as the basis for a survey of WG members regarding their knowledge of available research and their perception of need. Members were asked to rank the topics according to the criteria: Priority, Urgency and scientific Knowledge (PUK) needs using an easy scoring system (High 3 / Medium 2 / Low 1) in a questionnaire. The WG-E members had the opportunity to itemise specific

⁷ This summary has been developed in the context of the Common Implementation Strategy (CIS), a collaborative programme involving the European Commission, all the Member States, the Accession Countries, Norway and other stakeholders and Non-Governmental Organisations. The summary is a working draft and does not necessarily represent the official, formal position of any of the partners. This means that the views expressed in the document do not necessarily represent the views of the European Commission. Neither the European Commission nor any other CIS partners are responsible for the use that any third party might make of the information contained in this document.

⁸ http://www.onema.fr/IMG/EV/seminaires/Presentations_PDF_CISSPI/2-Kase_Final_SPI_actvity_for_WG_E.pdf

⁹ <https://circabc.europa.eu/faces/jsp/extension/wai/navigation/container.jsp>

Research area/topic (please make no changes in this column and use the comments column if necessary)	Prioritisation				Comments
	Priority Score	Urgency Score	Knowledge-Importance Score	Available Literature (links to relevant reports and publications)	
1. Integrated strategy and holistic R&D approaches					
1.1 Defining the R&D strategy					
1.2 Harmonisation of knowledge basis and strategic approaches for chemicals in European policies					
1.3 Case studies and user perspective					
2. Priority substances in surface waters					

sources of knowledge literature, references) or add comments, for example indicating current national or international projects. They were also invited to propose additional topics.

The main objectives of this questionnaire were to:

- ➔ update and prioritise research needs on the basis of the 1st SPI event outcomes (Task 1);
- ➔ collect information on available knowledge in order to identify gaps (Task 2);
- ➔ identify priority topics for dissemination and knowledge transfer (Task 3).

Thirteen Member States, including two Non-Member States from WG-E, responded to the questionnaire during October 2011-January 2012 and the results were presented at the 15th WG-E meeting on 14th March 2012¹⁰.

Sixteen additional topics for further research, making 39 in total, were proposed by WG-E members and included in the final

prioritisation list. Member States were asked at the meeting on 14th March for an estimate of how they would rank these additional topics in a questionnaire handout which was immediately returned after the meeting.

Participation level of WG-E

The original questionnaire results i.e. inputs from 13 Member States or non Member-States (Belgium-Flanders (BE 1), Belgium-Wallonia and Belgian Federal Service Marine Environment (BE 2), Bulgaria (BG), Croatia (HR), Estonia (EE), France (FR), Germany (DE), Italy (IT), Latvia (LV), Lithuania (LT), Portugal (PT), Romania (RO) and Switzerland (CH)) as well as a response from one stakeholder association (CONCAWE (European Oil Companies Association for Environment, Health and Safety in Refining and Distribution)) were provided in April 2012, and therefore not coevaluated with the earlier contributions¹¹.

Topic-specific knowledge availability in WG-E

A good knowledge availability was obtained for most of the topics by the provision of additional literature links and other useful sources (Figure 5).

Substantial contributions came from larger as well as smaller MS, e.g. FR and PT, respectively, and from non-MS, e.g. CH, and covered most of the pressing topics (see Figure 6).

A good score for research availability and access was received by most of the 23 proposed topics from the WG-E members.

An average of 3.2 literature contributions was received for each topic.

An average of 6.8 comments was received for each topic, and these allowed the meaning and the focus of some topics to be better specified and a link to be drawn with ongoing projects. The available knowledge is listed by topic in section 3 of the full report.

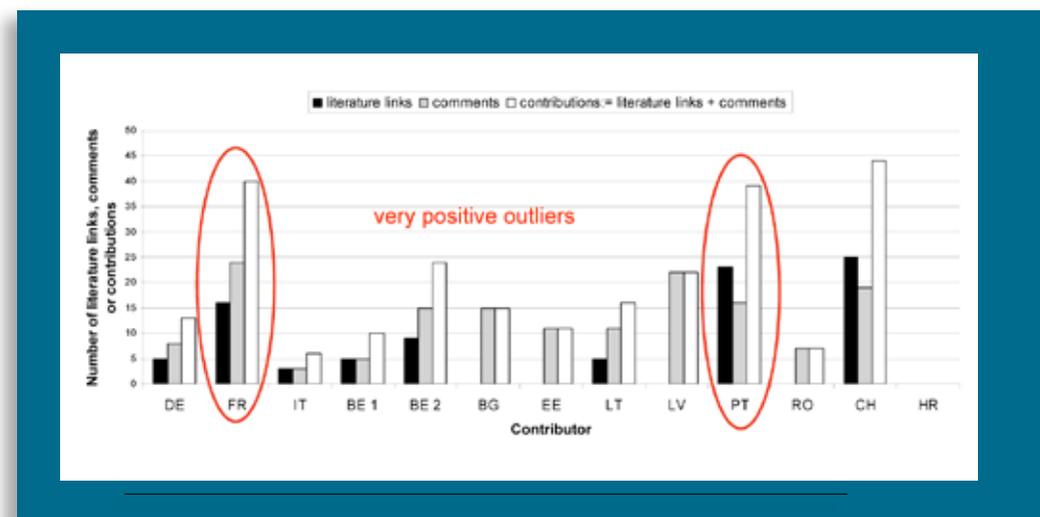


Figure 5. Literature, comments and other contributions from 13 Member States regarding the 23 research topic needs, October 2011-January 2012.

¹⁰ Available on CIRCABC, WG Chemicals folder

¹¹ See Annex of the report of WG-E SPI activity available on CIRCABC

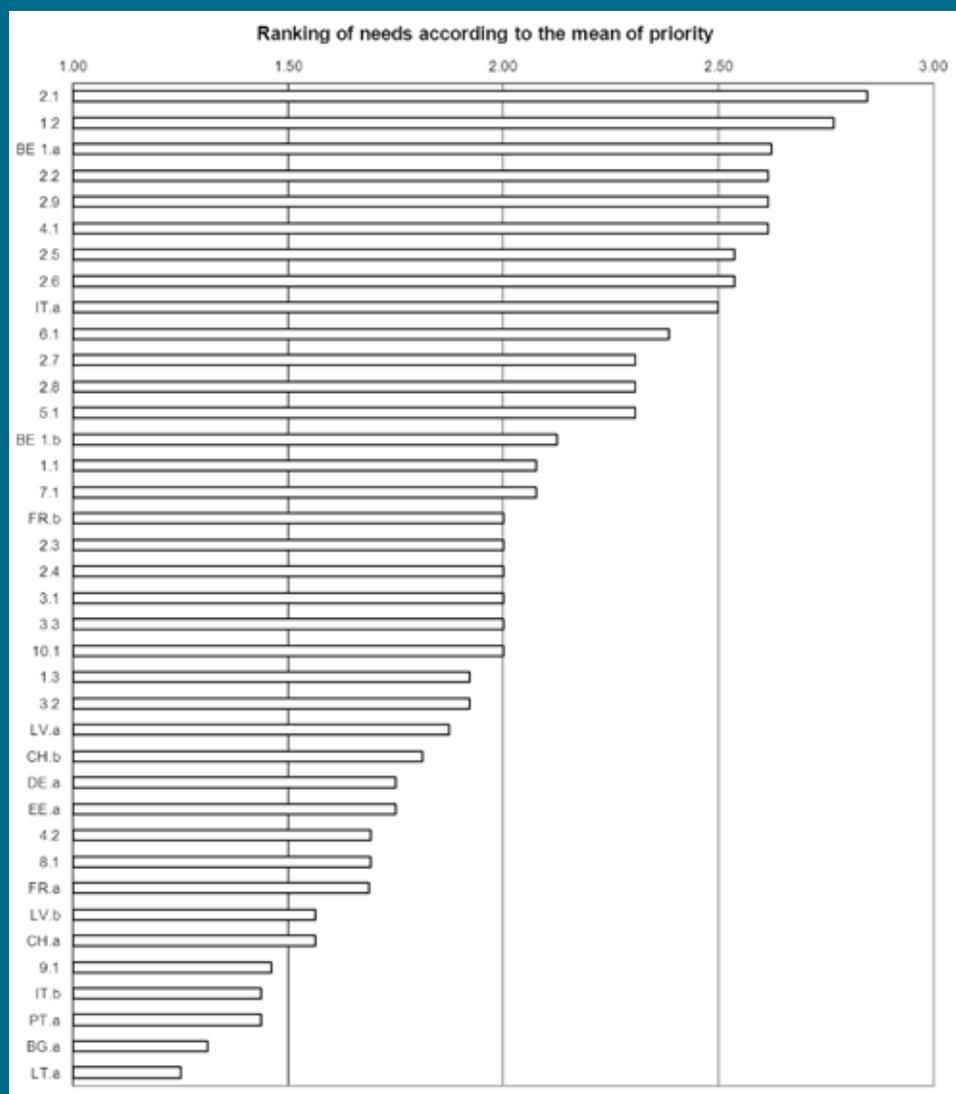


Figure 6. Ranking of the 39 research topic needs according to the mean priority score

Priority-based analysis of research needs

During the 15th WG-E meeting a quick prioritisation of the 16 additional research topics proposed by Member States was made. The Table 1 shows the combined evaluation of the 23 original SPI topics and 16 additional WG-E topics with

regard to the Priority score. A PUK prioritisation was also made, but the time limitation during the WG-E meeting led to the preferred use of the Priority ranking. The additionally provided information was indicated by the abbreviation of the state and proposal a) or b), for example IT.a (rank 9) and IT.b (rank 35).

Rank according to mean, Priority score	Combined topic list	Topic number	Priority score - mean	Priority score - sum
1	Development and improvement of suitable harmonised analytical procedures for new priority substances	2.1	2.85	37.00
2	Harmonisation of knowledge basis and strategic approaches for chemicals in European policies	1.2	2.77	36.00
3	Relationships between ecological, chemical and biological status needs to be studied.	BE 1.a	2.63	42.00
4	Development and improvement of sampling procedures and techniques for existing and new priority substances	2.2	2.62	34.00
5	Non target analysis and screening	2.9	2.62	34.00
6	Review and testing of EQS	4.1	2.62	34.00
7	Relationship and interactions between concentrations of priority substances in the three matrixes: water, sediment and biota	2.5	2.54	33.00
8	Development of bio-indicators/bio-assays for groups of substances	2.6	2.54	33.00
9	Use of ecotoxicology tools to link chemical and ecological status	IT.a	2.50	40.00
10	Identification of possible future Priority Substances	6.1	2.38	31.00
11	Validation of existing bio-test systems	2.7	2.31	30.00

Table 1. Topic list (39 topics) and ranking according to "Priority" score .

Rank according to mean, Priority score	Combined topic list	Topic number	Priority score - mean	Priority score - sum
12	Investigation of the behaviour/effects of mixtures of hazardous substances in the water environment, including synergistic effects	2.8	2.31	30.00
13	Improvement of WFD water Quality monitoring programmes	5.1	2.31	30.00
14	Combination of chemical and biological effect monitoring: passive sampler - bioassay combination	BE 1.b	2.13	34.00
15	Defining the R&D strategy	1.1	2.08	27.00
16	Assessment of the risk of non-compliance with regard to the chemical status	7.1	2.08	27.00
17	Environmental Quality Standard (EQS) for mixture of substances exhibiting similar mode of actions	FR.b	2.00	32.00
18	Develop an EU-applicable method for deriving the background concentration of metals in surface waters and general research on background concentration	2.3	2.00	26.00
19	Speciation and bioavailability models for metals	2.4	2.00	26.00
20	Investigation of the bioavailability and effects of priority substances in the marine environment	3.1	2.00	26.00
21	Relationship and interactions between concentrations of priority substances in the three matrixes: water, sediment and biota in the marine environment	3.3	2.00	26.00
22	Diagnosis of toxic impact on multiply stressed ecosystem and for prognosis of the effectiveness of management plans	10.1	2.00	26.00
23	Case studies and user perspective	1.3	1.92	25.00
24	Lab and field studies on toxicity to the marine environment of priority substances	3.2	1.92	25.00
25	Priority substances regarding surface/ groundwater pollution exchange	LV.a	1.88	30.00
26	Implementation of different biological responses in risk assessment	CH.b	1.81	29.00

Rank according to mean, Priority score	Combined topic list	Topic number	Priority score - mean	Priority score - sum
27	Compliance monitoring Persistent, Bioaccumulable and Toxic (PBT) / Priority Hazardous Substances (PHS)-substances	DE.a	1.75	28.00
28	Identifying chemicals activities in their life cycle processes. Substance flow analysis tools for identification of sources to prevent the pollution of waters.	EE.a	1.75	28.00
29	Development of sound statistical methods	4.2	1.69	22.00
30	Understanding the effects of climate change on Environmental contaminants	8.1	1.69	22.00
31	Investigation of life cycle of new priority substances (sources, pathways, ...)	FR.a	1.69	27.00
32	Relationship between climatohydrological conditions and water chemical status – surface and groundwater status and extreme events	LV.b	1.56	25.00
33	Measures to minimize input of contaminants into surface waters	CH.a	1.56	25.00
34	Spatio-temporal approach to quantifying risks	9.1	1.46	19.00
35	Evaluation of the risks for human health of the priority substances	IT.b	1.44	23.00
36	Temporary rivers	PT.a	1.44	23.00
37	Development of methods for contamination level assessment of little and drying up river	BG.a	1.31	21.00
38	A case study (Lithuanian Baltic Sea) of the concentrations of the most relevant for the area priority substances in all matrixes (water, sediments, biota)	LT.a	1.25	20.00
39	Similar to: IPA 2009 Twinning project "Capacity building for implementation Directive on pollution caused by certain dangerous substances discharged into the aquatic environment and the WFD"	HR.a	1.06	17.00

Results of the analysis

The main conclusions are:

- ➔ for the most part, the additionally proposed (updated) research topics received a relatively low Priority ranking;
- ➔ despite this the update of the research needs influenced the previous Top 10 SPI research topics, because of the high ranking of topics BE1.a and IT.a. These two could be merged into a single topic;
- ➔ a comparison between the priority needs vs. the additional literature or other information provided by the MS in the questionnaire could reveal dissemination gaps/opportunities.

Recommendations for top-priority research topics

A number of recommendations have been given in section 3 in the main report of the WG-E SPI activity (available on CIR-CABC): in relation to the specific research topic needs. These can be summarised briefly as follows (Table 2) for the topics with highest priority need.

In addition, it is recommended that topics 2.1 and topic 2.2 be considered together because of the scope for selecting an optimum

combination of sampling and analytical methods.

The comparison of knowledge need with the available knowledge led also to dissemination possibilities

These possibilities are:

- ➔ an updated list of 39 research needs can be proposed based on a priority score, which is very similar to the PUK prioritisation of the 23 original SPI topics;
 - ➔ most of the topics with highest research need also have good knowledge availability;
 - ➔ it is possible that information availability is greatest where an urgent need has already been recognised;
 - ➔ there is an opportunity for better disseminating literature among the WG-E members so that redundancies in research and associated cost can be avoided in the future, and research can be focused on unresolved issues.
- But it is also likely that this is currently not sufficiently considered in planning.

Rank according to mean Priority score	Combined topic list	Topic number	Priority score -mean	Recommendations
1	Development and improvement of suitable harmonised analytical procedures for new priority substances	2.1	2.85	See specific recommendation in section 3; also CMEP report from subtask 3.1 F is available
2	Harmonisation of knowledge basis and strategic approaches for chemicals in European policies	1.2	2.77	See specific recommendation in section 3, and related CIS Guidance; also in 2013 a related project from UBA (DE) is expected
3	Relationships between ecological, chemical and biological status needs to be studied.	BE 1.a	2.63	See specific recommendations in section 4.4
4	Development and improvement of sampling procedures and techniques for existing and new priority substances	2.2	2.62	See specific recommendation in section 3; the JRC and Norman Network will contribute recommendations for passive sampling in October 2012
4	Non target analysis and screening	2.9	2.62	Very promising for the future; see specific recommendation in section 3
4	Review and testing of EQS	4.1	2.62	See specific recommendation in section 3, and related CIS Guidance; also more activities on data quality and evaluation harmonization are ongoing

Table 2. Recommendations for most priority research topics in WG-E

Main conclusions regarding the CIS-SPI tasks in WG-E

Task 1: Create an inventory of research and implementation needs from Working Group E. YES, an updated inventory of research needs was achieved on a representative basis.

Task 2: Identify available research and research gaps. YES, available research and research gaps were identified.

Task 3: Improve knowledge transfer and usability of research outputs. PARTIALLY, the questionnaire results are a good basis for information exchange in the WG-E meetings.

At WG-E meetings, members have been asked to select preferred research topics for possible future presentation to the WG (using a handout). This has resulted in presentations on 2-3 topics per meeting.

The expenses of external speakers have been covered by CIS-SPI - important to motivate external participation.

4 examples of SPI-related presentations at WG-E from 2012

Michael Schärer (CH, FOEN): Developing the Swiss strategy to reduce organic micro pollutants with focus on waste water

Paul Whitehouse (UK, EA-UK): How can we implement biota standards? - is there a role for passive samplers?

Wilfried Sanchez (FR, INERIS): Effect-based monitoring of endocrine disrupting chemicals including estrogens in French freshwater ecosystems

Matthias Liess (DE, UFZ): SPEAR, linking chemical pollution with ecological effects

SPI was contributing to active knowledge exchange on a need-oriented basis. Internal and external expertise was presented and discussed during the meetings.

Current needs of WG-E and links to the SPI prioritisation

Research prioritisation should be linked to current and future activities related to the implementation of the chemical aspects of the WFD.

In January 2012 the European Commission adopted a proposal to add 15 substances to the priority substances list, along with corresponding environmental quality standards¹².

This proposal (COM(2011) 876) includes a revised (second) list of priority substances, and provisions to improve the functioning of the legislation. The main features of the proposal are:

- ➔ 15 additional priority substances;
- ➔ 6 of them designated as priority hazardous substances;
- ➔ stricter EQS for four existing priority substances and slightly revised EQS for three others;
- ➔ the designation of two existing priority substances as priority hazardous substances;
- ➔ the introduction of biota standards for several substances;

➔ provisions to improve the efficiency of monitoring and the clarity of reporting with regard to certain substances behaving as ubiquitous persistent, bioaccumulative and toxic (PBT) substances;

➔ a provision for a watch-list mechanism designed to allow targeted EU-wide monitoring of substances of possible concern to support the prioritisation process in future reviews of the priority substances list.

These features require the refinement or development of some additional monitoring methods, for example to meet the quality assurance/quality control criteria for chemical analyses where the EQS are low or to improve monitoring in biota.

Inevitably, the SPI prioritisation outcomes reflect the above, as well as a wish to develop alternatives to biota monitoring (by focusing on passive sampling and effect based tools) and to find better ways of identifying priority substances or making a connection between chemical and ecological status.

¹² http://ec.europa.eu/environment/water/water-dangersub/pri_substances.htm#prop_2011

The fact that there are more than 80 000 potentially toxic compounds calls for the development of more integrated indicators, including for ecotoxicological effects, as we will not be able to monitor all these compounds. DG ENV has indicated that future reviews of the priority substances list could benefit from the use of complementary tools (incl. ecotoxicology) to identify problematic pollutants and their thresholds.

The specific need for method identification, evaluation, validation and standardisation of monitoring methods has been recognised by the Commission in its proposal that the CMEP (Chemical Monitoring of Emerging Pollutants) receive a mandate to develop additional guidance and monitoring methods.

The CMEP has been working on finalising several tasks in support of the WG-E.

Contributors to this executive summary for CIS-SPI activities for WG-E

The contributors were:

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(indirect contributions).

Example 3 - Answers, experiences and impacts of SPI activity in the Working group on groundwater (WG-C)¹³

Rob WARD (*British Geological Survey, UK*)

WG-C is one of the Water Framework Directive (WFD) Common Implementation Strategy (CIS) Working Groups. Its purpose over the last mandate period has been to provide technical support to enable exchanges on the implementation of the WFD and new Groundwater Directive (GWD). Its focusing has been on: best practices related to programmes of measures; methodology for groundwater threshold values, status and trend assessment and; integrated risk assessment. All Member States are represented on WG-C along with associated and candidate countries, recognised industrial and scientific stakeholders and NGOs.

WG-C has a successful history of supporting the WFD and GWD through production of a range of technical reports and CIS guidance documents as well as supporting the development

of the GWD and subsequent recommendations for its revision. The involvement of the scientific community both directly and indirectly has ensured that the discussions and outcomes have been informed by current scientific knowledge. As a result, the influence of science is evident in its outputs. Some examples include the integration of methodologies and concepts developed under the FP5 Baseline and FP6 BRIDGE projects in to the CIS guidance on Status Assessment, Threshold Values and Trends, and the ongoing work of the FP7 GENESIS projects in the recommendations for revision of Annex I and II of the GWD.

WG-C plenary meetings (held twice yearly) always have a standing item on science during which current relevant science is presented and research needs and ideas discussed. Where WG-C is addressing specific issues, focussed workshops are organised. Over the last three years there have been a number of these including: climate change impacts on groundwater; delineation and characterisation of groundwater

¹³ http://www.onema.fr/IMG/EV/seminaires/Presentations_PDF_CISSPI/3-Rob_Ward.pdf

bodies and; groundwater dependent ecosystems. These workshops bring together scientists and decision makers from across Europe.

WG-C has also participated in the CIS-SPI initiative through attendance at the previous workshops and completing the

research questionnaire. Through this process and discussion both in plenary and at workshops a number of priority research topics have been identified. These are shown in Table 3. The questionnaire was completed by 17 Member States and 3 NGO/Stakeholders.

1-4	Climate change impacts: <ul style="list-style-type: none"> • On surface water-groundwater interaction • On long-term WR availability and sustainability • On groundwater quality (including other environmental change factors) • Tools/techniques to assess the sensitivity and vulnerability of GW
5	Classification system for GWDTE with associated objectives/threshold values.
6-7	New/emerging pressures on groundwater: <ul style="list-style-type: none"> • Indirect impacts of CC mitigation e.g. CCS, shale gas, geothermal • Emerging pollutants - fate and behaviour,
8-9	Emerging pollutants: <ul style="list-style-type: none"> • Fate, behaviour and transformations in GW • Assessment criteria and environmental objectives (including classifying)
10	Research programme to specifically address recital 20 of the Groundwater Directive (groundwater ecosystems)

Table 3. Priority research topics.

4.3. Key note speech 2 - compilation of and lessons learnt from SPI activities around the world

K* (KStar) & the Water Science-Policy Interface: an international perspective¹⁴

Alex BIELAK (*Knowledge broker and chair of K* initiative*)

During his keynote presentation, Alex BIELAK was asked to help participants “expand their understanding of Knowledge Transfer, exchange, mobilization, brokering etc.,” via a compilation of key messages and lessons learned from the global K* conference, 2012¹⁵⁻¹⁶. Based on his experience, he was also asked to reflect on key factors for success in Science-Policy integration (SPI).

He noted that, across sectors, geographies, and disciplines, there is a growing awareness and emphasis in knowledge sharing at the interfaces of research, policy and practice.

There is a wide variety of terms used to depict and describe knowledge sharing activities including: knowledge brokering, knowledge translation, knowledge exchange and knowledge mobilization. The different terminology has hidden the fact that the actual functions they describe are all systemically related to each other as illustrated by Figure 7.

K* was coined as an overarching concept and as a useful shorthand to describe the various aforementioned terms and also to represent a framework to think to about K* functions and processes. This allows one to see how the diverse range of K* functions, processes, and practitioners fits within the landscape of knowledge to optimize knowledge sharing.

¹⁴ http://www.onema.fr/IMG/EV/seminaires/Presentations_PDF_CISSPI/4-Alex_Bielak-KStar.pdf

¹⁵ http://inweh.unu.edu/kstar/#K*Conference

¹⁶ As described in the K* concept paper “K* is the collective term for the set of functions and processes at the various interfaces between knowledge, practice and policy. “K* improves the ways in which knowledge is shared and applied: improving processes already in place to bring about more effective and sustainable change.” (Shaxson, Louise with Alex T. Bielak, et al. 2012. Expanding our understanding of K* (KT, KE, KTT, KMb, KB, KM, etc.) A concept paper emerging from the K* conference held in Hamilton, Ontario, Canada, April 2012. UNU-INWEH, Hamilton, ON. 30pp + appendices)

The K* Spectrum

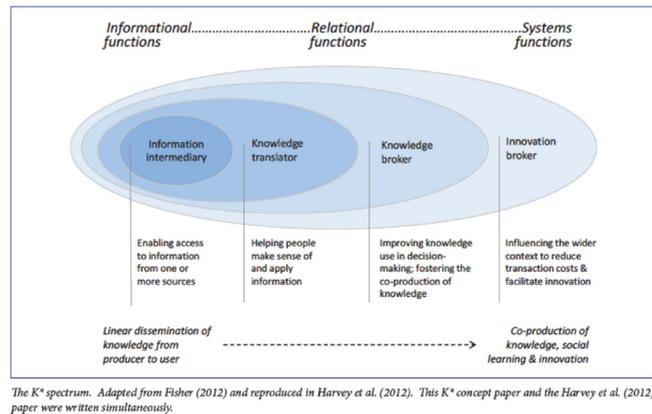


Figure 7. The K* Spectrum

The concepts described are as applicable to the water sector as any other.

Thanks to the work of various parties we have many K* tools and toolkits at our disposal. We understand the structural, individual, organizational and systemic obstacles to K* practice, and know the sort of skills that Knowledge brokers require. Case studies from the K* conference were discussed, and K* products and approaches by two Canadian organizations presented. These showcased a range of successful approaches to SPI.

Alex BIELAK concluded by suggesting four key factors for SPI success:

- ➔ stop re-inventing the wheel;
- know what the barriers are;

- know skills required for Knowledge brokering;
- tool kits abound.

➔ think about and Invest in Kstar functions upfront:

- understand which are needed and in what contexts;
- consider investing in in-house intermediaries (not just steering committees);
- brainstorm audiences/ dissemination strategies;
- consider how to assess success (not necessarily measure).

➔ involve all players from the outset and sustain communications and interactions;

➔ stop spinning our wheels - Just do it!;

- no restrictions on who can “do” K*, or what they call what they are doing;
- need not be very costly.

4.4. Key note speech 3 - example of SPI activity at the international basin level: the Danube case

Streamlining Knowledge to Address WFD Challenges: The Danube Case¹⁷

Philip WELLER (*Executive Secretary of the International Commission for the Protection of the Danube River*).

The ICPDR is a Commission established based upon a Convention signed by all the Danube countries in June 1994. Since this date the ICPDR has

developed as a forum for the Danube countries discussion and consensus on issues related to water management including implementation of the WFD and EFD. The Commission is fully controlled and managed by the countries, and is a Commission that reflects the interests and consensus achieved between them (Figure 8). It has been functioning effectively since the ratification of the Convention in 1998.

Balancing of interests

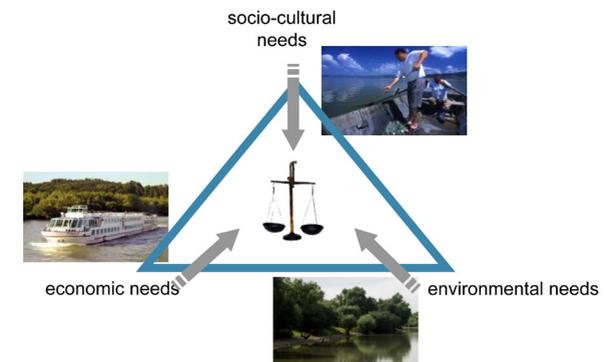


Figure 8. Balancing of interests

¹⁷ http://www.onema.fr/IMG/EV/seminaires/Presentations_PDF_CISSPI/5-ICPDR_Weller.pdf

A number of products and tools have been created by the countries cooperation in the ICPDR which support sustainable development in the Danube region. These include the Danube River Basin Management Plan (DRBMP), the Danube Flood Action Programme and the awareness-raising activities including Danube Day.

The DRBMP is a detailed plan which specifies the status of water in the Danube and the actions needed to achieve “good status” as a basis for sustainable development. An important element of the River Basin Management Plan is the Transnational Monitoring Network (TNMN) which provides information on the ecological and chemical status of Danube waters. This information is reinforced by the Joint Danube Surveys (JDS) which have take place in 6 year cycles.

All the activities of the ICPDR are based upon sound science and are dependent upon carefully planned information systems and supported by various research activities - particularly in support of the new information systems needed (water quality assessment) following the adoption of the WFD.

A large Geographic Information System (GIS) database on sources of pollution and environmental factors affecting water resources also exists including data on wastewater treatment and on structures in the river - dams, weirs etc. This database and information system will be continually updated and can be used to evaluate and assess actions and activities related to water management.

Key lessons can be drawn from the Danube experience:

- ➔ sound information collection and science needs to be the foundation upon which the work of the ICPDR (an international river commission) is based;
- ➔ the existing policy level (WFD/EFD) has created new needs related to information collection and science that have required new approaches;
- ➔ the ICPDR has organized research and science actions targeted at key policy issues;
- ➔ the ICPDR has profited from and been a participant in a number of key research projects;
- ➔ the mechanism of linking projects and research with policy and decision makers can be greatly improved.

4.5. Key note speech 4 - example of SPI activity at the national level: the UK case

Science-Policy Interface - activity at the national level; an English case study¹⁸

Bob HARRIS (*Defra, Secretariat of the Demonstration Test Catchments Project, UK*)

Communication

In order for scientists and policy-makers/implementers to communicate they must share a language and an understanding of the context of the subject. Most importantly, they must share a common conceptual understanding. This infrequently

happens as research is carried out at the lab, plot, field or farm scale, whereas policy is developed at much higher levels (national/regional). We must address the need to connect across scales (Figure 9).

People who can do this are important but rare. They see the bigger picture, are translators, joiners-up, and able to think outside of the box. This can make them non-conformists and therefore square pegs in round holes to modern management ways of thinking.



Figure 9. Scales of work

¹⁸ http://www.onema.fr/IMG/EV/seminaires/Presentations_PDF_CISSPI/6-CIS_SPI_Bob_Harris.pdf

Timing and context

Policy-makers often want quick answers from scientific research, outcomes over short timescales. So researchers have to learn to translate their findings over shorter timescales and policy-makers to understand the timescales of research and the frequent lack of certainty that leads to reluctance to make findings public. But there are times when new knowledge is more receptive to policy makers and similarly times when research is seeking to be more policy relevant. Windows of opportunity result on both sides - for government, when policy is refreshed or legislative deadlines are due and for research, when funders develop new programmes. We need to co-ordinate these windows.

Case studies

Translators of science and policy

between 1992-2003 the Environment Agency in England and Wales, established and ran a number of National Centres of Expertise one of which dealt with groundwater and contaminated land. Staff divided their time in:

- ➡ developing new policy on sub-surface pollution protection / remediation;
- ➡ providing operational support to regulatory staff in the field;
- ➡ managing research programmes and projects.

They therefore had a unique opportunity to understand all aspects of issues and rapidly developed a national reputation. Policy was informed and research was relevant. Great strides were made in producing pragmatic, workable policies and practical guidance to field staff on managing risks.

Science recognising the need to engage - running for 8 years between 2004-2012 the Rural Economy and Land Use Programme (RELU) was a collaboration between funders and end users (research councils and government). Spending £26m over 39 projects it had the size and longevity to contribute a substantial body of knowledge and provide a legacy. But most importantly there was recognition that significant investment in knowledge transfer/exchange and synthesising outcomes was vital. The outputs in the form of briefings, newsletters

and workshops have been highly influential. They were also timely as policy formulation over the rural environment was ready for reform. (see www.relu.ac.uk/news/Evaluation.htm)

Windows of Opportunity

In 2010 the UK elected a new government that embarked on developing the first environmental white paper (new policy) for 20 years, followed by a white paper about water policy. The RELU outputs were highly influential in shaping their content and in particular helped address dissatisfaction with the River Basin Planning process which had been a top-down approach producing



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uniformity rather than addressing local diversity. A few research projects, which had addressed the issues of community-led catchment management, delivered new thinking at precisely the right time for policy development and have hugely influenced the government's catchment based approach to the 2nd round of River Basin Plans¹⁹.

A Way Forward Research Platforms

Characteristics of a research platform: Long-term commitment and funding; Information and knowledge developed iteratively with the stakeholder community; outcome focused; open access; co-design and shared agenda between scientists and end users of research; pooling of resources; encouragement of interdisciplinarity.

The Demonstration Test Catchments project is an example of such a platform currently addressing the connectivity between food production (agriculture) and water quality²⁰.

¹⁹ www.defra.gov.uk/environment/quality/water/legislation/catchment-approach/

²⁰ www.demonstratingcatchmentmanagement.net

4.6. Key note speech 5 - example of SPI activity at the river basin level: the Rhône case

A long term environmental research observatory in interaction with river basin stakeholders²¹

Didier GRAILLOT (*member of the Zone Atelier du Bassin du Rhône board - Ecole des Mines de Saint-Etienne, Graduate School of engineering, FR*)
Anne Clémens (*Groupe de Recherche Rhône-Alpes sur les Infrastructures et l'Eau - GRAIE, ZABR Director*)

The Rhone Basin Long Term Environment Research (a scientific label of the CNRS) comprises Observatory and/or Experimental Sites. It is the support of research programmes that provide elements of knowledge to stakeholders and to public decision-makers, in the field of sustainable management of rivers and watersheds.

It aims to provide decision-makers with a methodology to evaluate the effects of watershed rehabilitation or restoration on river hydrosystems, in terms of

biodiversity, sustainability (lasting effects), ecological services and potential uses. Several research programmes are produced taking into account the WFD. Efforts are made to put in common data and research programme results.

ZABR works closely with territory stakeholders, which includes:

- ➡ the organisation of seminars to share experiences and data, in order to encourage interdisciplinary research programmes meeting the expectations of river managers;
- ➡ the federation of research action dynamics at the Rhone basin scale in cooperation with the Rhone-Mediterranean & Corsica Water Agency;
- ➡ the development of adequate methods to spread out results and take into account the lay-out of professionals who might use the results of these research programmes: regional, national and international conferences, research technical synthesis and technical books highlighting knowledge generated by territory stakeholders

²¹ http://www.onema.fr/IMG/EV/seminaires/Presentations_PDF_CISSPI/7-Graillot_CIS_SPI.pdf

The ZABR coordination is operated by the GRAIE, the Rhone-Alps Group of Research on the Infrastructures and Water.

ZABR is where research questions are created, research is conducted, and results are made available. It plays an interface role between the pluridisciplinary scientific committee and territory stakeholders.



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4.7. Key note speech 6 - support of policy options of relevance to the Blueprint to Safeguard Europe's Water resources

Drought, from Science to Science-Policy Dialogue, 15 years of experiences²²

Wouter WOLTERS & Henny A.J. van LANEN (*DROUGHT R&SPI*)

The presentation discusses the experiences from FP4 - FP7 research projects throughout the last years, and which developments took place at the science level. These experiences are embedded in international cooperation with e.g. UNESCO, WMO and UN-ISDR, and are also linked to knowledge sharing

in professional organisations, e.g. IAHS and IAH.

There is a clear mandate to work on drought. Drought is natural hazard that has hit Europe hard over the last decades. Likely it will become more frequent and more severe due to the increased likelihood of warmer Northern winters and hotter Mediterranean summers.

There is an urgent need to improve drought preparedness through increased knowledge, drought management plans and an improved science-policy

²² http://www.onema.fr/IMG/EV/seminaires/Presentations_PDF_CISSPI/8-%20Wolters_vLanen.pdf

interfacing that will reduce vulnerability to future drought and the risks they pose for Europe.

The Blueprint to safeguard Europe's waters explicitly addresses drought and water scarcity, and mentions that it cannot present a one-size-fits-all answer to policy issues, but that it tries to put in place a tool box that Member States can rely on to improve water management. The Blueprint sets the Agenda for EU water policy in the next years, in particular for the Common Implementation Strategy that brings together the Commission, the Member States and stakeholders under the WFD.

In the early research projects there is a focus on natural sciences, with issues as Drought Event Definition, Groundwater Droughts, Initial Time Series Analyses, Regional Drought Analyses, Atmospheric Circulation and Drought, Drought Visualisation, Drought Monitoring and Prediction, etc. There is no mention whatsoever of River Basin Management Plans or Water Framework Directive.

Then, gradually, there is also attention for human influences, and ecological (E-flows and drought - currently very high on agenda) and operational water management aspects. The ASTHyDA project partnership led to the start of the European Drought Centre (EDC), decided in Bratislava, 2004. In the European Drought Centre, scientists attempt to exchange knowledge, experiences, and tools, to arrive at consolidation beyond projects. It is a virtual centre, with now over 250 drought experts, with about 20% members from outside Europe.

Following this there is an important addition to the natural sciences work, as in the outreach reports the outcome is translated for policy makers and stakeholders. In the Xerochore project, where drought was studied in its full width (i.e. natural hazard, impacts, management) there was a consultation of about 100 organizations across Europe. And the project made 5 science-policy briefs, on WFD Articles 5, 8, 9, 11, 13, and translated them in 5 languages (DE, UK, ES, F, IT).

© DROUGHT-R&SPI project



In the DROUGHT-R&SPI project, the idea is to advance on drought research and associated science-policy interfacing to reduce drought vulnerabilities and risks in Europe. The policy options identified in the Blueprint to safeguard Europe's water resources (2012) will be important guidance, and the aim is to support the development or further improvement of drought management planning in the framework of the 2nd cycle of WFD River Basin Management Plans (2015).

DROUGHT-R&SPI organised the 1st pan-EU Drought Dialogue Forum (30-31 October 2012). The first day was dedicated to the link between science and policy at different stages of policy development: design of policy; its implementation, in particular on the context of the WFD river basin management planning; and then its review. The time-frame of policy making and research are often different, and therefore they need to meet at specific dates (design,

implementation, review), if they want to be interactive (science influencing policy and vice-versa). The Forum discussed policy options in the light of the Blueprint to safeguard Europe's waters, which will be adopted under the Cyprus EU Presidency on 26-27 November 2012 in Cyprus.

During the second day, the focus was on an exercise using a fictive Mediterranean river basin, suffering from drought. Twelve different projects covering various scales and categories (as FP7 projects, EU development projects, national research projects with an international dimension, and Interreg projects) accepted the invitation to participate. On the basis of the outcomes of their respective projects they proposed pragmatic solutions to prevent or mitigate the effects of drought in the fictive basin. The presented solutions were tackling different periods of time and impacts: before the drought event, during the event and after it. This exercise highlighted the wide range of policy responses as well as the need to establish synergies among different research and demonstration programmes.

One of the conclusions of the developments in the last years is that there is a clear development from a focus on natural sciences only towards progressing science and science-policy-making.

There are still many issues to be dealt with, including:

- ➡ the recognition that SPI at detailed scales (context specific) easier than at pan-European scale;
- ➡ there are excellent examples of SPI in a river basin, e.g. in the Júcar basin (Spain);
- ➡ there are also excellent examples of SPI at national level;
- ➡ issues relating to SPI at pan-EU level (e.g. the 1st Dialogue Forum in Cyprus):
 - how to focus if your scope is “Europe”?
 - how to include the role of Member States at pan-EU level?
 - how to get dialogue participation of policy makers?
 - ...

The 3rd SPI Event organised by the Commission (DG R&I) and ONEMA offers an excellent opportunity to discuss such issues!.

Support of policy options relevant to the Blueprint to Safeguard Europe’s Water²³

Giuseppina MONACELLI (*Expert Group on Water Scarcity and Drought EG-WSD*)

The review of the WS&D Strategy will be integrated into the “Blueprint to safeguard European waters”, jointly with an analysis of the implementation of the Water Framework Directive and the vulnerability of water resources to climate change and other man-made pressures.

The Blueprint will synthesize policy recommendations building on the four reviews of the EU water policies:

- ➡ the assessment of the River Basin Management Plans delivered by the Member States under the Water Framework Directive;
- ➡ the review of the EU action on Water Scarcity and Drought;
- ➡ the assessment of the vulnerability of water resources to climate change and other man made pressures and;
- ➡ the Fitness Check which

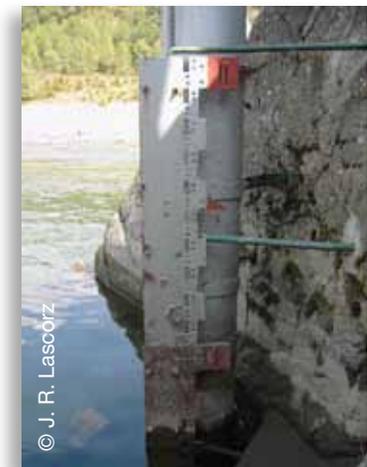
will address the whole EU water policy in the framework of the Commission Better Regulation approach.

Thanks to a large number of projects promoted by DG Research, DG Environment and other EU and national institutions, a multi-disciplinary and multi-sectorial knowledge has been developed and will be produced with ongoing and future projects enlarging the possible policy options.

Over the period 2010-12, the WS&D expert group (EG) activities have focused on the links with the FP7 research projects (i.e. XEROCHORE) and WS&D policies and strategies have taken into account the research initiatives following the mandate of the CIS-SPI ad-hoc activity aiming at establishing working relationships among research projects and WFD implementers. For this purpose, in the framework of the SPI activities, a questionnaire was sent to the WS&D EG members and the main research needs pinpointed through the WFD implementation process were surveyed. The WS&D EG carried out the

exercise of mapping research needs and project results able to contribute to the expert network’s tasks.

The last WS&D EG Meeting held in Athens on 12-14 September 2012 has consolidated the relationship between the researchers working in the DROUGHT - R&SPI and the CIS group. Suggestions about methodologies and tools (databases, brochures for instance) for a better dialogue among researchers and policy actors that will arise from this 3rd CIS-SPI event will be tested during the next meeting of WS&D EG to be held in Bratislava next 4-5 December 2012.



²³ http://www.onema.fr/IMG/EV/seminaires/Presentations_PDF_CISSPI/9-Monacelli_CIS.pdf

Despite the great number of research projects already considered for the CIS activities, there is still a large number of projects dealing with the same issues under different EU and national programmes (such as INTERREG, LIFE+, DG

ENV calls, etc.) whose results could be taken into account as evidence of the applicability of the consolidated research outcomes for a better water resources management and EU water policy implementation.

4.8. Key note speech 7 - support of WFD implementation

*SPI activities within an EU-funded research project: the WISER project*²⁴

Daniel HERING (*WISER, University of Duisburg-Essen, Germany*)

WISER, a project running from 2009 to 2012, developed methods to assess and to restore surface waters in Europe. The scope was broad, the partnership included 25 institutes and EU-funding was 7 million Euros.

The targeted user groups of WISER results were ECOSTAT and the Geographical Intercalibration Groups (GIGs), national environment agencies, river basin authorities

and applied scientists. WISER's products included about 105 scientific papers (with about 1,200 pages), 89 report (with > 4,500 pages) and databases (with more than 1.6 million data). While these original results are useful for scientists and a selected group of experts, they were strongly simplified to disseminate them more widely:

- ➔ several products were jointly developed together with users, e.g. a database on national assessment systems for surface water bodies in Europe (together with ECOSTAT);
- ➔ the overall results were summarized into 20 key messages (always covering the sections: message, evidence, implications, further reading);

- ➔ the developed assessment methods were reported in standard "common metric sheets";
- ➔ complex pathways and interactions following restoration were visualized in interactive flowcharts;
- ➔ all software products were designed for open access;
- ➔ databases were also presented online with interactive user interfaces

While all these tools are easily applicable and accessible for water managers working at an international level, it is unlikely that products will be taken up by many smaller river basin authorities without tailor-made dissemination. An example from another project is given (AQEM, 2000-2002), which developed a readily available assessment system for rivers using benthic invertebrates. Implementation of this system in Germany required four years, three national projects and twenty six meetings before it was adopted as the official method to assess rivers in Germany. Since then more than thirty training workshops were held and the system had to undergo several revisions.

The overall conclusions regarding successful implantation of the results of RTD projects into water management are:

- ➔ define products with joint responsibilities of project and users;
- ➔ be creative in how to present the results in a simplified version;
- ➔ a long and intense implementation phase (after the project) is always needed;
- ➔ products need to be maintained.

*Science-Policy Interface (SPI) and Ecological status: what has been achieved to date and where are we going to?*²⁵

Yorick REYJOL (*ONEMA, Working group on ecological status*)

In the 1st SPI event, in Brussels, a relatively balanced representation between researchers and WFD end-users was ensured for the different round tables, including WG A related to Ecological status assessment (globally, 35% of representatives were from the scientific community

²⁴ http://www.onema.fr/IMG/EV/seminaires/Presentations_PDF_CISSPI/10-Hering_WISER.pdf

²⁵ http://www.onema.fr/IMG/EV/seminaires/Presentations_PDF_CISSPI/11Reyjol_SPI_ecostat.pdf



and 65% were end-users). Research needs were discussed in nine parallel round tables. For WG A – Ecostat, 16 research issues were prioritised following the 1st SPI event.

From September to December 2011, these issues were thoroughly discussed, including a formal consultation of Ecostat members (water managers, scientific experts, representatives of Ministries), resulting in a consolidated shortlist of 10 priority research issues at the beginning of 2012.

From April to June 2012, 16 scientific experts working in the different research fields identified were asked to write a 3 to 5 pages state-of-the-art summary, including knowledge gaps for each research issue, which were compiled into a synthesis document in late 2012.

Information/validation points regarding the SPI process were regularly made at WG Ecostat level.

A synthesis document was transmitted to the strategic coordination group (SCG) at the end of 2012, as part of the CIS-SPI progress report for transmission to the Water Directors group. From there, the following research items were identified as of primary concerns for enhancing WFD implementation.

1. To overcome knowledge gaps for transitional waters
2. To overcome knowledge gaps for lakes
3. To analyse the links between ecotoxicology and bioassessment tools
4. To overcome difficulties in assessing ecological status in temporary streams
5. To take into account the different sources of uncertainties in ecological evaluation
6. To develop models for the spatial extrapolation of ecological status
7. To understand the impact of hydromorphological modifications and select effective remediation approaches
8. To develop functional assessment tools
9. To clarify the links between global change and ecosystem functioning
10. To reinforce the knowledge on relationships between Good

Ecological Status (GES), biodiversity and ecosystem's services

This process enabled to write a global synthesis document related to Ecological status, now being upgraded to a scientific publication

to be published in a peer-reviewed journal whose scope encompasses WFD issues. This way-to-go-forward was very appreciated by all participants, including scientists and water managers.

4.9. Key note speech 8 - support of knowledge communication

*IMPRINTS a step ahead towards SPI and support of knowledge communication*²⁶

Daniel SEMPERE (*IMPRINTS*)

The aim of IMPRINTS was to contribute to reduce loss of life and economic damage through the improvement of the preparedness and the operational risk management for Flash Flood and Debris Flow [FF/DF] generating events, as well as to contribute to sustainable development through reducing damages to the environment. To this end the project produced methods and tools to be used by emergency agencies and utility companies responsible for the management of FF/DF risks and associated effects. The project also developed an integrated probabilistic forecasting

FF/DF system as well as a probabilistic early warning and a rule-based probabilistic forecasting system adapted to the operational use by practitioners. IMPRINTS has built up strong links with policy sectors at international (UN-ISDR) and EU level support to Flood Directive), and has contributed to a wider awareness of flash flood prevention through public-wide video materials.

*Science-policy interface and the Floods working group*²⁷

Maria BRÄTTEMARK (*Working Group on Floods (WG-F)*)

The speaker was not able to provide a formal summary. To find out more about this topic the reader is invited to refer to the presentation.

²⁶ http://www.onema.fr/IMG/EV/seminaires/Presentations_PDF_CISSPI/12-Sempere_CISSPI-IMPRINTS.pdf

²⁷ http://www.onema.fr/IMG/EV/seminaires/Presentations_PDF_CISSPI/13-Brattemark.pdf

5

Summary of roundtables findings and

key points addressed during discussions



Three roundtables/break-out sessions addressed the following topics:

- ➔ demonstration of added-value and benefits of science-policy interfacing;
- ➔ recommendable structures, mechanisms and actors to enhance science-policy interfacing in the CIS context;
- ➔ and methods and tools for knowledge brokering in the CIS structure.

The following sections present the recommendations highlighted during each roundtable.

5.1. First set of roundtables - Day 1

Roundtable 1 - Day 1

Facilitator: Bob Harris

Rapporteur: Natacha Amorsi²⁸

The discussion highlighted the following key elements. SPI is more addressing applied research than blue skies, mostly publicly funded in the absence of big industry. The current evaluation of research is based on simple indicators for peer review, but SPI could influence as the research impact needs to be evaluated. The SPI skills have to be included in the education, with a target to reach the good person to widespread the message and know the audience and communicate very simply.

The time lag between research delivery and its use is an issue. LIFE+ programme could be a good tool to promote the dissemination but the funding mechanism and the low added value for a researcher are a barrier. The work done on research prioritisation under CIS-SPI ad-hoc activity could also help and needs to be passed to researchers.

The roundtable recommended:

- ➡ translation and application do not have to rely on researchers and the message could be delivered by trained people;
- ➡ translation by trusted knowledge brokers is needed at all levels;
- ➡ there is a need for a set of tools to access research, policy needs, accessible abstracts and how research has been used;
- ➡ a group of experts synthesising the information, bringing together the knowledge from projects and providing this to policy is needed.



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²⁸ http://www.onema.fr/IMG/EV/seminaires/Presentations_PDF_CISSPI/Roundtables1/RT1_day1.pdf

Roundtable 2 - Day 1

Facilitator: Alex Bielak

Rapporteur: Céline Hervé Bazin²⁹

The roundtable recommended :

- ➡ to demonstrate added value of SPI to secure buy-in through seven key points that are: bring social science approach and working process as a driver, promote interdisciplinary approach and broaden the project scope, involve stakeholders throughout the project including perception of citizens and have a dissemination plan, train and educate future researchers on SPI, specify the broker function and make it visible, insure information consistency and long term availability;
- ➡ the added value of CIS-SPI comes from - and could be increased by - the involved experts personality, the specific SPI literature produced, the policy support which in turn shows the added value and investment return, the development of SPI indicators with a long term approach and non direct link, the communication framing and interaction and by showing the SPI is an innovation booster;



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- ➡ on structure and mechanisms, tools and implementation, the SPI could develop standards for projects like benefits fact sheets to communicate on the projects added value. For existing research, effort should be put to raise awareness on existing tools and research, and include the projects' audience through methods and approaches targeting end-users, involving them and make them feel included. The development of framework of dialogue and training for policy and research, including "hackathon approach" to gather together the audience using the work on one tool as a training for SPI and broker, but also develop an hiring policy on SPI experts.

²⁹ http://www.onema.fr/IMG/EV/seminaires/Presentations_PDF_CISSPI/Roundtables1/RT2_day1.pdf

Roundtable 3 - Day 1

Facilitator: Claire Mac Camphill

Rapporteur: Guido Vaes³⁰

The roundtable recommended:

- ➡ much money is spent in science and SPI is done to translate science into effective policy and implementation: an evaluation system of societal impact should complement the current research awarding systems that are based solely on high quality research;
- ➡ research funding organisations should make and push the link to related policies, the use of societal impact criteria and knowledge breaking including translation in policy briefs and make all this available together with project description in a repository for future use;
- ➡ translators and knowledge brokers are needed and should be appointed, including through twinings between successful past projects and currently running projects to exchange good practices towards other projects and regions;
- ➡ demonstration sites should be put forward;
- ➡ building of the research

agenda should involve the SPI community (research and policy);

- ➡ SCG should be extended to include a research component and CIS-SPI should be formally embedded in CIS groups;
- ➡ the demonstration of the need for research to tackle urgent and key problems and the cost of no action should be highlighted to policy makers and the general public to convince them of the need to uptake.
- ➡ the knowledge brokering should also target researchers and the public and make them aware of what the policies are meant for and there background.

Roundtable 4 - Day 1

Facilitator: Maria Mimikou

Rapporteur: Ragab Ragab³¹

The roundtable recommended on the first question:

- ➡ there is a need for a mechanism to bridge the gap between policy makers and researchers;
- ➡ researchers should have a business and dissemination plan with clear deliverables for end users that should also

- be identified, and involved in defining the business plan;
- ➡ training sessions, workshops and open days should be organised for end users and stakeholders;
- ➡ a mechanism is needed to motivate and encourage end users to participate and state their priorities;
- ➡ a common language between regulators and researchers need to be established, and skilful knowledge brokers identified;
- ➡ existing fora like World Water Forum should be used as a mechanism;
- ➡ demand driven research should receive priority without excluding blue sky research.

- ➡ demonstrate the possible impact and beneficiaries of the research with real world applications;
- ➡ research plan should be adaptable to users needs and advisory committees and knowledge brokers are necessary;
- ➡ knowledge portals are needed and mechanisms for data accessibility should be found, and an EU Server hosting all EU funded projects websites for continuation of knowledge transfer seems a good solution;
- ➡ establish a priority list of research topics elaborated and agreed between researchers and funders and regulators, the need oriented research having priority.

On the second question they recommended:



³⁰ http://www.onema.fr/IMG/EV/seminaires/Presentations_PDF_CISSPI/Roundtables1/RT3_day1.pdf

³¹ http://www.onema.fr/IMG/EV/seminaires/Presentations_PDF_CISSPI/Roundtables1/RT4_day1.pdf

5.2. Second set of roundtables - Day 2

Roundtable 1 - Day 2

Facilitator: Xenia Theodotou Schneider

Rapporteur: Johanna von der Weppen³²

The roundtable recommended to strengthen the interlinkages between three geographical levels EU, national and regional and three EU financing programmes (FP, LIFE+ and Interreg), and adopt best practices from other sectors/projects (ex: biomet.net, UK water research directory, Wise-RTD, European Water Community, SPI-cluster).

It highlighted some ground rules that are:

- ➔ give open access to data and information with a need to convince gatekeepers to do it: public sector, journals and researchers, this is a paradigm shift and this will increase private sector use;
- ➔ create communities of practice that can help change opinions;
- ➔ develop user friendly targeted communication;

➔ personal contacts are the basis to make tacit knowledge explicit.

And then some key aspects on format, content and level of details were pointed out:

- ➔ with the need to make the things accessible, easily searchable, understandable and with information dashboards;
- ➔ with information targeted and timely;
- ➔ using common templates to allow easy comparison and synthesis;
- ➔ with tools defined by end-users.

All these should help create reflex on where to find information.

³² http://www.onema.fr/IMG/EV/seminaires/Presentations_PDF_CISSPI/Roundtables%20/RT1_day2.pdf

Roundtable 2 - Day 2

Facilitator: Enrique Playan

Rapporteur: Hinano Spreafico³³

To improve knowledge transfer, the roundtable recommended:

- ➔ to change the way we see researchers (from visionary mission);
- ➔ have balanced project consortium involving also science communication experts and social scientists;
- ➔ to favour synergies among researchers, NGOs and CSOs;
- ➔ to fund in parallel to research the active interaction between researchers and policy makers;
- ➔ to change the way we approach research.

As regards rules for knowledge transfer, the roundtable stressed that:

- ➔ internet is not enough for information collection and there is a need for knowledge translation and knowledge brokerage;
- ➔ direct contacts between policy and scientists are necessary;
- ➔ the strategies are to be established case by case;

➔ there is a need for a funding framework to support SPI;

➔ written material should be balanced with informal workshops.

Roundtable 3 - Day 2

Facilitator: Elena Guista

Rapporteur: Adriaan Slob³⁴

The roundtable proposed a set of recommendations on best practices for SPI:

- ➔ four groups should be involved: scientists, policy makers but also stakeholders and politicians;
- ➔ early involvement is needed, preferably informal with a co-creation target, and with knowledge exchange and public project presentation;
- ➔ to secure SPI, dissemination should be made from the beginning, and resources for dissemination after the ending of the project should be identified/secured;
- ➔ good documentation of best practices is needed;
- ➔ exchange of best practices and experiences between the

³³ http://www.onema.fr/IMG/EV/seminaires/Presentations_PDF_CISSPI/Roundtables%20/RT2_day2.pdf

³⁴ http://www.onema.fr/IMG/EV/seminaires/Presentations_PDF_CISSPI/Roundtables%20/RT3_day2.pdf

levels are needed but language and resources (time and money) can be a problem;

➔ knowledge broker is a needed role that can be done by different types of people from consultant to scientist to policy makers but with a need to be rewarded for this role, and thematic workshops may help identify what are the projects, and who can organise the information flow between the involved actors.

The roundtable also proposed a recommendation on crossing levels and boundaries. Cross level experience exchanges are needed but institutional and disciplines boundaries are hard to cross, whereas the river basin management plans ask for multi-sector, multidisciplinary, multi-stakeholders and multi-layers communication.

It's also recommended to look for the level where the decisions are made and get social significance and design a delivery mechanism to this level and organise it as a project.

Roundtable 4 - Day 2

Facilitator: Sergey Moroz,

Rapporteur: Benoît Fribourg-Blanc³⁵

The roundtable summarised some key conclusions of the first day that are the need to prioritise research topics with simple criteria, to have transparency and analysis of the information chain to identify bottlenecks, to motivate people by developing a win-win system and insure a continuous SPI to have people get used to.

First some good practices were identified by the participants:

- ➔ making CIS WG/EG identifying there research needs is a good practice to be continued;
- ➔ embedding targeted ERA-Net calls in WG meetings help better target key policy questions;
- ➔ allowing flexibility in research project to adapt to the evolving needs;
- ➔ engaging stakeholders in implementation through linking local visible issues and WFD objectives;
- ➔ make sure that scientists and water managers interact

³⁵ http://www.onema.fr/IMG/EV/seminaires/Presentations_PDF_CISSPI/Roundtables%202/RT4_day2.pdf

on a regular basis (minimum 2x/year).

The roundtable also proposed a set of recommendations:

- ➔ research community needs to be able to anticipate from the beginning how the decision makers will use their results;
- ➔ SPI helps policy and citizens be aware of the results, but these still need to be translated into actions;
- ➔ competent authorities need to implement a knowledge brokering process towards river basin districts and other potential users for communication and translation on research outputs and incentives to projects

for dissemination (ex: part of funding based on number of hits on the project website);

➔ no "one size fits all" solution exists, but good tools can help and need to be tailored to the targeted audiences: open days visits for end users and policy makers, briefs in simple language, series of workshops to make people aware of progress and interact with end users, databases to collect information and keep them available after the end of the project, SPI-targeted funded projects, for a operational synthesis translated in all EU languages. ■



ANNEXES

Programme of the event

3RD CIS-SPI EVENT

“Water science meets policy: how to streamline knowledge to address WFD policy challenges?”

Date: 14-15 November 2012

Venue: Brussels - Management Centre Europe

DAY ONE Impacts and added value of SPI activities	
9.00 - 9.30	REGISTRATION
9.30 - 9.35	INTRODUCTION AND EXPLANATION - Christos FRAGAKIS - European Commission - DG RTD
9.35-9.50	OPENING SPEECH - Manuela SOARES - European Commission - DG RTD - Patrick FLAMMARION - ONEMA - Peter GAMMELTOFT European Commission - DG Env
9.50	A. FIRST PLENARY SESSION Concrete SPI examples from water sector addressing the whole SPI cycle (or a part of the SPI cycle) with measurable impact in improving policy implementation at different levels (EU, national, river basin levels) from the social, economic and environmental perspective chair: Arnas MILUKAS - European Commission - DG RTD
9.50-10.50	KEY NOTE SPEECH 1 (example of SPI activity at the European level) - Frédérique MARTINI - ONEMA - Michel SCHOUPE - European Commission - DG RTD Answers, experiences and impacts of SPI activity in the Working group on chemical aspects (WG-E) - Robert KASE - Swiss Centre for Applied Ecotoxicology, CH Answers, experiences and impacts of SPI activity in the Working group on groundwater (WG-C) - Rob WARD - British Geological Survey, UK Questions
10.50-11.10	COFFEE BREAK
11.10-11.35	KEY NOTE SPEECH 2 (compilation of and lessons learnt from SPI activities around the world) - Alex BIELAK- Knowledge broker and chair of K* initiative Questions

DAY ONE Impacts and added value of SPI activities (suite)	
11.35-12.00	KEY NOTE SPEECH 3 (example of SPI activity at the international basin level): THE DANUBE CASE - Philip WELLER - ICPDR / Questions
12.00-12.25	KEY NOTE SPEECH 4 (example of SPI activity at the national level): THE UK CASE - Bob HARRIS - DEFRA, UK / Questions
12.25-12.50	KEY NOTE SPEECH 5 (example of SPI activity at the river basin level): THE RHONE CASE - Didier GRAILLOT - Zone atelier du bassin du Rhône, FR Questions
12.50-14.00	LUNCH
14.00-14.10	B. INTRODUCTION TO ROUNDTABLES Chair: Frédérique MARTINI - ONEMA ROUNDTABLES – 1ST SET Several parallel roundtables to address the issues related to the first two objectives of the workshop:
14.10-15.30	1. Demonstration of the added value of science-policy interface: success stories in the water sector regarding SPI activities worldwide, and at European, national and river basin levels; 2. Elaboration on structures, mechanisms and actors to ensure an active, continuous, dynamic and sustainable science-policy interface in the CIS context;
15.30-16.00	COFFEE BREAK
16.00	C. SECOND PLENARY SESSION REPORTS FROM THE ROUNDTABLE DISCUSSIONS – 1ST SET
16.00-16.10	REPORT FROM ROUNDTABLE 1
16.10-16.20	REPORT FROM ROUNDTABLE 2
16.20-16.30	REPORT FROM ROUNDTABLE 3
16.30-16.40	REPORT FROM ROUNDTABLE 4
16.40-17.20	QUESTIONS + DISCUSSION
17.30	POSTERS SESSION TRAINING SESSION ON SPI CLUSTER TOOLS: HOW TO MATCH WATER NEEDS WITH SCIENTIFIC AVAILABLE KNOWLEDGE? (WISE-RTD + WaterDiss +Stream)
18.25	END OF DAY1
18.30	COCKTAIL

DAY TWO CIS-SPI operational modalities	
09.00	D THIRD PLENARY SESSION - EXPERIENCE OF FLOW OF INFORMATION IN SOME EU PROJECTS Chair: Marta MOREN-ABAT – European Commission - DG Env
09.05-09.30	KEY NOTE SPEECH 6 Support of policy options of relevance to the Blueprint to Safeguard Europe's Water: - Wouter WOLTERS – DROUGHT R&SPI - Giuseppina MONACELLI – Expert group on water scarcity and drought
20'	PANEL DISCUSSION WITH ALL THE SPEAKERS OF THE THIRD PLENARY SESSION Facilitator: Jos BRILS - Deltares
10.35-10.55	COFFEE BREAK
10.55-11.20	KEY NOTE SPEECH 8 Support of knowledge communication - Daniel SEMPERE – IMPRINTS - Maria BRÄTTEMARK – Working group on floods
20'	PANEL DISCUSSION WITH ALL THE SPEAKERS OF THE THIRD PLENARY SESSION Facilitator: Jos BRILS - Deltares
11.40-11.45	E. INTRODUCTION TO ROUNDTABLES – 2ND SET
11.45-13.00	ROUNDTABLES – 2ND SET Parallel roundtables addressing the same questions to cover the 3rd objective objectives of the workshop: 3. Investigation on methods and tools for knowledge brokering and «customisation» of the information to address the users' needs at the various levels (EU, national, river basin), including cross-scaling issues, and realistic ways of addressing them within the current CIS structure.
13.00-14.00	LUNCH

DAY TWO CIS-SPI operational modalities	
14.00	F. FOURTH PLENARY SESSION Chair: Gilles NEVEU – International office for water
	REPORTS FROM ROUNDTABLES DISCUSSIONS – 2ND SET
14.00-14.10	REPORT FROM ROUNDTABLE 1
14.10-14.20	REPORT FROM ROUNDTABLE 2
14.20 -14.30	REPORT FROM ROUNDTABLE 3
14.40-15.00	QUESTIONS + DISCUSSION
15.00-15.20	COFFEE BREAK
15.20-16.20	PANEL DISCUSSION – SPI CORRESPONDENTS Evaluation of new practices in the CIS-SPI context; applicability (in each WG) of the recommendations identified during the previous roundtables as for the tools and mechanisms for SPI. Aim: to identify commonalities suiting all WGs. Facilitator: Philippe QUEVAUVILLER – European Commission - DG RTD
16.20	GENERAL DISCUSSION & CONCLUSION - Frédérique MARTINI – ONEMA - Christos FRAGAKIS - European Commission - DG RTD
16.20	END OF EVENT

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Acronyms

Terms

CAP	Common Agricultural Policy
CIRCABC	Communication and Information Resource Centre for Administrations, Businesses and Citizens
CIS	Common Implementation Strategy
DRBMP	Danube River Basin Management Plan
EG	Expert Group
EIP	European Innovation Partnership
EQS	Environmental Quality Standard
ERA-Net	European Research Area Network
EWC	European Water Community
FD/efd	Directive 2007/60/EC on the assessment and management of flood risks /Flood directive
FP	Framework Programme for research and development of the European Commission
FP7	7 th Framework Program for research and development of the European Commission
GIS	Geographic Information System
GWD	Directive 2006/118/EC on the protection of groundwater against pollution and deterioration / Groundwater directive
INTERREG	INTER REGion
JDS	Joint Danube Survey
JPI	Joint Programming Initiative
MS	Member State
PBT	Persistent, Bioaccumulable and Toxic
PHS	Priority Hazardous Substances
PUK	Priority, Urgency and scientific Knowledge
RBD	River Basin District
RBMP	River Basin Management Plan
RELU	Rural Economy and Land Use
SPI	Science Policy Interface
TNMN	Trans National Monitoring Network
WD	Water Directors

WFD	Directive 2000/60/EC establishing a framework for Community action in the field of water policy / Water framework directive
WG	Working Group
WISE-RTD	Water Information System for Europe-Research and Technology

Organisations

CONCAWE	CONservation of Clean Air and Water in Europe
DEFRA	Department for Environment, Food and Rural Affairs
DG ENV	Directorate General Environment (European Commission)
DG R&I/ DG RTD	Directorate General of Research and Innovation (European Commission)
EC	European Commission
EDC	European Drought Centre
EG-CCW	Expert Group Climate Change and Water
EG-WSD	Expert Group Water Scarcity and Drought
EU	European Union
GRAIE	Groupe de Recherche Rhône-Alpes sur les Infrastructures et l'Eau
ICPDR	The International Commission for the protection of the Danube river
LIFE	L'Instrument Financier pour l'Environnement
NGO	Non Governmental Organisation
OIEau	Office International de l'Eau
ONEMA	Office National de l'Eau et des Milieux Aquatiques
UNESCO	United Nations Educational, Scientific and Cultural Organization
WG-A	Working Group on Ecological Status
WG-C	Working Group on Groundwater
WG-E	Working Group on Chemical Aspects
WG-F	Working Group on Floods
WMO	World Meteorological Organisation
ZABR	Zone Atelier du Bassin du Rhône

**This document is part of the “Meeting Recap” collection,
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It presents the main elements of a meeting co-organised
by Onema and DG R&I.**

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